OFER 8412

LIFE SCIENCE AREAS OF NATURAL AND SCIENTIFIC INTEREST IN SITE DISTRICT 6-13

A Review and Assessment of Significant Natural Areas in Site District 6-13

September 1984

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Ontario
Ministry of Natural Resources
Hon. Alan W. Pope, Minister
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The full citation for this report is:

Hanna, R. 1984. Life Science Areas of Natural and Scientific Interest in Site District 6-13: A Review and Assessment of Significant Natural Areas in Site District 6-13. Parks and Recreational Areas Section, Ontario Ministry of Natural Resources, Central Region, Richmond Hill, Ontario. vii + 57 pp. + folded map, illus.

For convenience, this report may be referred to as OFER 8412. It is one of a number of Open File Ecological Reports comprised of reconnaissance surveys and inventories of ecological areas in Ontario.

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Reference copies of this report are available in the above offices, and the Natural Resources Library, 4th Floor, Whitney Block, Room 4540, 99 Wellesley Street West, Toronto, Ontario M7A 1W3. Copies have been sent to university libraries in Southern Ontario.

ISBN 0-7743-9520-6

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* Effective October 1, 1984

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PREFACE

In 1977, the Parks and Recreational Areas Programme of the Ontario Ministry of Natural Resources, with special funding approved by Management Board of Cabinet, initiated a provincial survey of natural areas in connection with park system planning. A parallel initiative focused on the identification of geological sites representative of Ontario's earth science diversity. The mandate for these surveys stem from the protection objective of the Ontario Provincial Parks Policy (1978), which is "to protect provincially significant elements of the natural and cultural landscapes of Ontario."

The overall objective of the natural areas survey is to identify a series of ecological areas that comprise the spectrum of natural landscapes, environments and biotic communities in Ontario. This objective issues from a Cabinet endorsed guideline of the 1978 parks policy which recognizes the role of provincial parks in protecting "a system of features representative of Ontario's life science history and diversity". With this aim, technical guidelines help to direct the selection, documentation and evaluation of natural areas throughout the site regions and site districts of the province.

Between 1980 and 1982, evaluations of remnant natural areas were undertaken in the site districts within the Central and Southwestern Regions of the Ministry. Through these assessments, the finest natural areas were chosen to complement natural features already represented within a series of Nature Reserves proposed through an earlier review of the provincial parks and park reserves (Lindsay and Hanna, 1980). In addition, natural areas identified through this survey complement the Candidate Nature Reserves already proposed for the Niagara Escarpment Planning Area (Parks Planning Branch, 1976).

The present report was issued as a draft in 1980 under the title *An Identification and Evaluation of Life Science Candidate Nature Reserves in Site District 6-13.* Now in the final edition, it is one of a series of such reports which have been completed to date and are available as 'Open File Ecological Reports'. The findings of these reports have provided the basis for many of the 'Recommended Provincial Parks' announced by the Minister in June 1983, and the 'Areas of Natural and Scientific Interest' designated in the District Land Use Guidelines also released at that time.

Although evolution of the land use planning process since 1981 has produced new terminology incorporating natural areas, this nomenclature is not used in this report. Rather, natural areas are referred to as either Candidate Nature Reserves or as Significant Sites. This is distinct from the new terminology, as used in the District Land Use Guidelines (OMNR, 1983), which groups natural areas and geological sites as Areas of Natural and Scientific Interest (ANSIs).

According to the District Land Use Guidelines, ANSIs may vary in level of significance. The most significant of these, those referred to as Candidate Nature Reserves in this report make the greatest contribution to the Ministry's protection objective and are listed in the District Land Use Guidelines. ANSIs which contribute to a lesser degree to the provincial protection objective are referred to as Significant Sites in this report and are considered to be at least regionally significant. The policy statement for Areas of Natural and Scientific Interest is appended.

Site district evaluations in the Central and Southwestern Regions of the Ministry were carried out by three biologists -- K.M. Lindsay, R. Hanna and R. Klinkenberg. Lindsay coordinated and directed the work, and evaluated Site Districts 6-5, 6-7 and 7-2. Hanna examined Site Districts 6-1, 6-6, 6-8, 6-13, 7-4, and 7-6; Klinkenberg examined Site Districts 7-1 and 6-1. While all three biologists shared common objectives and collaborated in developing evaluation techniques, each undertook field work and evaluation using methods appropriate to their respective site districts.

Each site district report includes an analysis and discussion of the natural features and natural areas of the site district, a discussion of the methodology, recommendations for further work and possible methods of natural areas protection. Check-sheets for Candidate Nature Reserves are appended, as are brief descriptions of other natural areas in the site district.

The information collected during the site district assessments forms the foundation of a provincial natural areas data base. This data base is being updated as new information is obtained. It is an important component for the planning process at district, regional and provincial levels of the Ministry. Readers are invited to add to the data base, either by contributing to studies conducted by the Ministry, or through information contributed to other groups seeking to protect natural areas.

Although site district assessments were designed to identify those natural areas which contribute mainly to the protection objective of the Ministry, this information should prove useful to regional and local governments, conservation authorities and other organizations involved with the identification and protection of significant natural areas. Protection of natural areas may be achieved in several ways, including the purchase of sites by outside agencies. Where natural areas designated as ANSIs occur on public lands managed by the Ministry, it will ensure that the land uses and activities which occur, provide for the protection of identified values. On private lands, the Ministry will, through cooperation with others, attempt to ensure that landowners are aware of the significant features on their properties and seek the owners' cooperation in protecting such features.

ACKNOWLEDGEMENTS

Many people contributed to the preparation of the site district reports. H. J. Featherston, H. Pronk, J. Griffin and G. Rodgers (Parks and Recreational Areas Section, Central Region, OMNR) played a major role in the administration of this project, providing continual and much appreciated logistic and technical support. G. Murphy and E. Martelle (Parks and Recreational Areas Section, Southwestern Region) also contributed substantially to this project. Technical direction for the project came from an informal committee composed of the Parks Coordinators of both regions, H. J. Featherston, G. Murphy and E. Martelle; the Regional Park Planners, G. Rodgers, W. McNab and I. Seddon; and T. J. Beechey (Life Science Coordinator, Parks and Recreational Areas Branch, Queen's Park). Discussions on technical matters with T. J. Beechey, W. McNab and G. Rodgers proved especially valuable. This report was prepared under contract to J. E. Hanna Associates Inc.; the Ontario Ministry of Natural Resources, however, undertook all aspects assocated with report production.

Throughout the course of this project, K. Lindsay provided regular direction, encouragement and advice. P. Terpstra's assistance with background research, data analysis, map preparation, field work and report editing has been invaluable. L. Sajnovic supervised report typing with proficiency and looked after many details.

The author would like to thank E. Hanna (J. E. Hanna Associates Inc.) for contributing specifically to the preparation of the Site District 6-13 report. Mr. Hanna discussed freely the method of site selection, provided information on specific sites and commented on drafts of this report. His ideas and support are appreciated and are reflected in the context of this report.

The draft Site District 6-13 report was reviewed by selected experts familiar with the geographical area under study in Site District 6-13. The comments made by R. Jones and J. Richards are appreciated and have been added to the data base for ANSIs at district and regional offices and the main office of the Ministry. These reviews generally confirmed the selection of ANSIs made by this site district study.

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1. Candidate Nature Reserves and Significant Sites in Site District 6-13 within Central Region

SUMMARY

Stretching in a narrow band along Lake Ontario from Whitby to Brighton, Site District 6-13 is typified by the cliffs, terraces and ancient shorelines of the old Lake Iroquois lakebed which rise 105 m (350 feet) above lake level to an undulating drumlinized till plain. The majority of the site district is intensively used for agricultural and urban activities being characterized by mixed farming, orchards, tobacco plantations, the urban-industrial complex of Oshawa and some of the oldest towns in Ontario such as Port Hope and Cobourg.

An overview of the physiographic regions and component landforms within Site District 6-13 suggested that the only vegetation-landform features which currently remain in a relatively undisturbed or natural state are lakefront marshes, swamp, river valley systems and uplands and shoreline cliffs. The study area consists of that part of Site District 6-13 within Central Region. No provincial parks or park reserves with nature reserve potential occur within the study area. The following eight candidate nature reserves were selected to represent the major vegetation landform features of the site district. These sites are limited by the quality of the remnant landscape.

Lakefront Marshes	LeVay's Marsh (30M/15 635560) Oshawa Marsh (30M/15 760600) Carr Marsh (30M/16 230770)
Swamp	Clarke Summit Swamp (30M/15 980690)
River Valley Systems with adjoining uplands	Soper Valley (30M/15 860710) Shelter Valley (31D/1 378815) Wesleyville Ravines (30M/16 080680)
Shoreline Bluff Complex	Bond Head Bluffs (30M/15 980635)

All eight candidate nature reserves are recommended for protection. Four of the eight are highlighted because of their outstanding contribution: Oshawa Marsh, LeVay's Marsh, Shelter Valley and Bond Head Bluffs.

One candidate nature reserve along the Oak Ridges Moraine in Site District 6-7, Millvalley Hills Forest (31D/1 310840), extends south into Site District 6-13.

1. INTRODUCTION

Site District 6-13, a part of Site Region 6, spans the Lake Ontario shoreline from Richardson Point, southwest of Whitby, to Presqu'ile, south of Brighton, and inland 15 km (9 miles) to the Oak Ridges Moraine (Figure 1). The eastern boundary of the Central Region of the Ministry of Natural Resources defines the eastern limit of the study area. Lake Port, west of Colbourne, lies on the eastern boundary. A portion of Site District 6-13 falls outside this study area within the Eastern Administrative Region of the Ministry. Hills (1959) defines a site region as an area of land within which the response of the vegetation to the features of the landform follows a consistent pattern. Each site region is further subdivided according to characteristic physiographic zones which set apart fairly large areas; these, Hills called site districts. Originally, Site District 6-13 was considered a part of Site Region 7 and was shown as part of Site District 7-4. Based on further vegetation research, Hills modified the boundary between the two regions in 1964 because the eastern portion of 7-4 lacked the southern vegetational characteristics typical of Site Region 7. As a result, this eastern section was reclassified as part of Site Region 6 and has been denoted as Site District 6-13 for park planning purposes. The text itself was never changed. Hills (1959) described Site Region 7 as undulating till plain with lacustrine deposits between the ridges. Site District 7-4 was described as a plain of water-laid and ice-laid deposits of clay and loam.

The categorizations and boundaries proposed by Hills do not coincide precisely with those of other authors. In particular, Chapman and Putnam (1973) recognize two distinct physiographic regions (refer to Glossary), namely the Iroquois Plain and South Slope, parts of which fall within Site District 6-13. Bluffs, terraces and old shorelines typify the lowlying clay and sand plains of the Iroquois lakebed. In some sections, these are interrupted by upland till plain islands. The Iroquois Plain rises to a maximum of 180 m a.s.l. (600 feet a.s.l.) to meet the undulating drumlinized till plain of the South Slope. The South Slope rises another 60 to 120 m (200 to 400 feet) to the foot of the Oak Ridges Moraine.

Table 1 presents an analysis of the landscape of Site District 6-13 and its remaining natural features. The physiographic regions that lie within the site district are listed in order of importance. For each physiographic region, component landforms are given, based on Chapman and Putnam, 1972. As well, the percentage and types of natural areas remaining is estimated based on a review of the 1:50,000 topographic maps covering the site district.

Following this overview of the site district, 5-10% of the site district was found to be in a relatively natural and undisturbed state. The most common remnant natural features are lakefront marshes and bluffs, small isolated upland woodlots, lowland/swamp areas and discontinuous river valley systems. In the study area, no parks or park reserves with nature reserve potential are available to represent these features. Consequently, a nature reserve site selection program was undertaken to identify sites which could provide adequate representation of the dominant vegetation-landform features. The methodology of the natural features overview, identification of features not represented by Parks, site selection procedure and a brief discussion of the results and recommended sites follows.

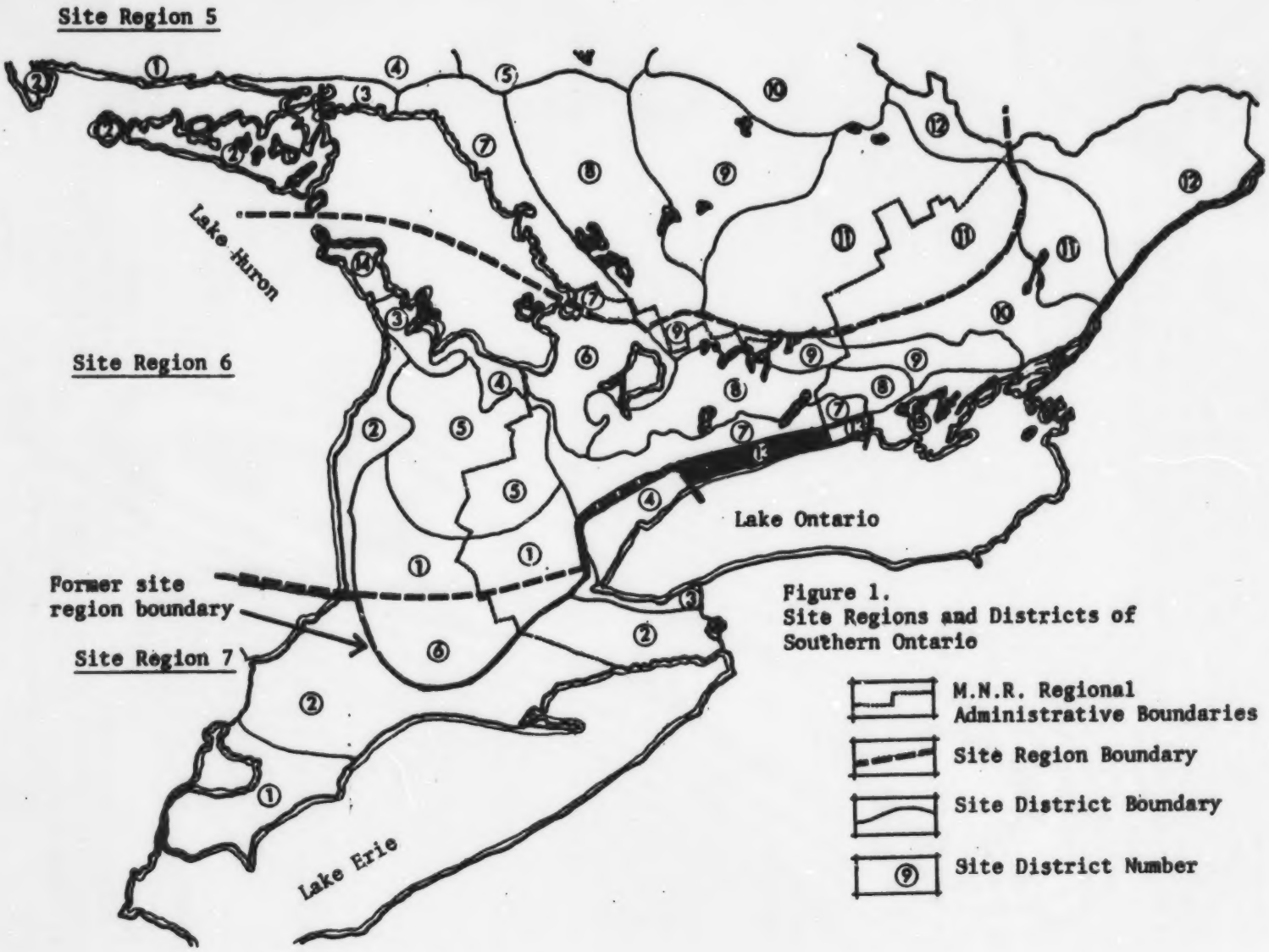


Figure 1.
Site Regions and Districts of Southern Ontario

TABLE 1. SUMMARY OF NATURAL FEATURES ANALYSIS AND CANDIDATE NATURE RESERVE SELECTION PROCEDURE BY PHYSIOGRAPHIC REGION AND LANDFORM FOR SITE DISTRICT 6-13

ANALYSIS OF NATURAL FEATURES OF SITE DISTRICT					FEATURES REPRESENTED BY CANDIDATE NATURE RESERVES IN PROVINCIAL PARKS/RESERVES			FEATURES MISSING FROM PROVINCIAL PARKS AND PARK RESERVES	CANDIDATE NATURE RESERVES SELECTED TO REPRESENT THE MISSING FEATURES
Physiographic Regions Wholly or partly within Site District	Proportion of Site District covered by Physiographic Region	Landforms found within Physiographic Region	Proportion of Physiographic Region occupied by each Landform	Types of Natural Features remaining on these Landforms and proportion remaining in a Natural Condition	Park Name	Feature(s)	Approx.Area		
Iroquois Plain (also in 7-3, 7-4 and 6-15)	60	clay plain (some drumlins)	50	-5% -numerous shoreline marshes -no forested drumlins -few scattered woodlots -shoreline bluffs near Newcastle	-	-	-	-lakefront marshes -shoreline bluffs	-LeVay's Marsh (30M/15 630560) -Oshawa Marsh (30M/15 760600) -Carr Marsh (30M/16 230770)
		sand plain bordered by old shorelines (some drumlins)	40	-10% -bluffs & terraces mined/farmed -small woodlots near Chub Point, Spencer Point -discontinuous creek systems -some forest tracts and shoreline near Brighton -lowland woodlots Newtonville	-	-	-	-swamps -river valley systems	-Soper Valley (30M/15 860710)
		drumlinized till plain	6	-1% -farmed/urbanized -shoreline bluffs -few ravines & scattered woodlots	-	-	-	-shoreline bluffs -river valley systems	-Bond Head Bluffs (30M/15 980635) -Wesleyville Ravines (30M/16 080680) -Clarke Summit Swamp (30M/15 980680)
		till moraine	2	-0% -farmed	-	-	-	-	-

TABLE 1. SUMMARY OF NATURAL FEATURES ANALYSIS AND CANDIDATE NATURE RESERVE SELECTION PROCEDURE BY PHYSIOGRAPHIC REGION AND LANDFORM FOR SITE DISTRICT 6-13

ANALYSIS OF NATURAL FEATURES OF SITE DISTRICT					FEATURES REPRESENTED BY CANDIDATE NATURE RESERVES IN PROVINCIAL PARKS/RESERVES			FEATURES MISSING FROM PROVINCIAL PARKS AND PARK RESERVES	CANDIDATE NATURE RESERVES SELECTED TO REPRESENT THE MISSING FEATURES
Physiographic Regions Wholly or partly within Site District	Proportion of Site District covered by Physiographic Region	Landforms found within Physiographic Region	Proportion of Physiographic Region occupied by each Landform	Types of Natural Features remaining on these Landforms and proportion remaining in a Natural Condition	Park Name	Feature(s)	Approx. Area		
Iroquois Plain cont'd	60	organic deposits	1	-90% -one large disturbed area near Colbourne	-	-	-	-	-
		kame moraine	1	-0% -farmed	-	-	-	-	-
South Slope (also in 6-7, 6-13)	40	drumlinized till plain with drumlin fields	97	-5% -drumlinoid hills and drumlin fields farmed except for river valleys and small scattered woodlots near Eddystone, Creighton Heights	-	-	-	-river valley systems -partially forested drumlins -swamp	-Shelter Valley (31D/1 378815)
		kame moraine	2	-0% -farmed	-	-	-	-	-
		esker	1	-0% -farmed	-	-	-	-	-
Oak Ridges Moraine (majority in 6-7)	1	see Site District 6-7 report							

2. METHODOLOGY

The following section outlines the four steps undertaken during the natural area overview and site selection procedure.

(i) Natural Features Analysis

The Protection Objective of Ontario's Provincial Parks Policy is "to protect provincially significant elements of the natural and cultural landscape of Ontario". Following an assessment by site district of the life science features with nature reserve potential in the Parks System, it was necessary to determine which features were not represented by Parks and which features would need to be included to meet the protection objective of this policy.

Site districts, as defined by Hills (1959), served as the sole basis for identifying and selecting vegetation - landform features which needed to be represented in the Parks System to preserve the diversity of landscape types present. However, the physiographic regions proposed by Chapman and Putnam were also considered primarily at the overview stage, step(i). By segregating the site district in this way, the identification of the full spectrum of features needing to be represented was facilitated. Throughout the text of this report, reference is made to these physiographic regions, however, site selection was based entirely on the analysis of the dominant vegetation-landform features of the site district irrespective of their association with the physiographic regions. Reference to these physiographic regions is intended simply to allow the reader to orient and compare the sites selected according to the system proposed by Chapman and Putnam.

Topographic (NTS 1:50,000) and physiographic (Chapman and Putnam, 1972 1:253,440) maps were used to estimate the percentage of Site District 6-13 within each physiographic region. Within each sector of the physiographic region, the areal frequency of the various vegetation-landform features were recorded. For each vegetation-landform feature, estimates of the percentage of the area remaining in a natural and undisturbed state were made and tabulated.

Features represented by Parks and those missing from the system were listed. Sections(ii)to(iv)of the Methodology outline the steps followed to document and select the best available examples of the dominant vegetation-landform features within the study area. Candidate nature reserves were chosen to represent the missing features identified through the natural features analysis. Table 2 tabulates the time spent on each step.

(iii) Review of Background Information

Existing information on file at the Ministry of Natural Resources, Central Region, Parks and Recreation Section was compiled according to physiographic regions and landforms,by P. Terpstra. This information is presented in Appendix B. Major sources of information for this site district included Environmentally Sensitive Areas (ESA) reports, Ministry of Natural Resources Sensitive Areas and internal reports and the International Biological Program (IBP) survey sheets. Environmental Data Cards, published articles and other governmental reports provided additional information.

TABLE 2. TIME ALLOCATION FOR NATURAL FEATURES ANALYSIS AND NATURE RESERVE SELECTION PROCEDURE FOR SITE DISTRICT 6-13

STEP	DAYS
1. Natural Feature Analysis (overview of natural landscape and identification of life science features not represented by Parks).	4
2. Review of Background Information (review of topographic maps, physiographic maps, airphotos and data; selection of sites for field checking).	4
3. Field Reconnaissance (by automobile and foot).	4
4. Site Evaluation (final review, comparison and evaluation of significant sites for candidate nature reserves; Environmental Data Card preparation and mapping).	5

Following the review of topographic and physiographic maps and the background data, representative life science sites with nature reserve potential were selected for detailed airphoto analysis. Where no information was available, sites were selected strictly from maps. The number of potential sites was reduced through airphoto analysis and a list was prepared for field investigation.

The following five criteria formed the basis for all phases of site selection and evaluation. Sites illustrating similar features were compared in terms of representation, diversity, condition, ecological considerations and special features.

(a) Representation - Representation of the remaining natural features of the site district was of primary importance. The dominant vegetation-landform features of the site district were given special emphasis.

(b) Diversity - Diversity was appraised in terms of the number and range of vegetation-landform features or habitats found within a site. The representation value of a site usually increases in proportion to the diversity of habitats contained within the site.

(c) Condition - The degree of past disturbance to the main feature(s) of the site was assessed. Logging, grazing, fire, drainage, flooding, mining, housing developments, transportation and utility corridors and recreation were some of the impacts that were considered. Because all of southern Ontario has been effected by human disturbance to varying degrees, none of the sites selected are pristine.

(d) Ecological Considerations - Ecological considerations such as size, shape, buffering from adjacent land use and watershed location were also weighed. Generally, larger sites, which would be more likely to maintain stable and diverse natural communities, were chosen over smaller sites. However, for certain life science features only small remnant sites are left, especially in the extreme southern part of Ontario (Site Region 7). In such cases, sites that were close together or linked were ranked higher than widely spaced, small areas. Recent work on island biogeography (Diamond, 1975) suggests that species extinctions are less likely to occur in larger sites, linked sites or closely spaced sites than in small, isolated sites. Headwater areas and watershed units where some degree of control over inputs would be possible were given special attention.

(e) Special Features - Allowance was also made for special features such as the presence of rare and endangered species, species of phytogeographical interest (significant species), nesting sites for colonial birds such as heronries, and concentrations of breeding and/or migratory waterfowl. The special features criterion was of secondary importance; it was applied only after representation, diversity, condition and ecological considerations had been assessed. Because detailed and complete biological data was lacking for most sites, caution was exercised in comparing the special features of sites with different levels of background data.

(iii) Field Reconnaissance

During the compilation of natural areas information for this site district, a total of four days, June 10-13, 1980 were spent field checking Site District 6-13; the study team consisted of the author and field assistant P. Terpstra. The area was travelled by automobile and to a lesser extent by foot. To gain a better understanding and appreciation of the general nature and features of the landscape, a pre-selected route was travelled on the first day through the site district. The remaining three days consisted of field checking twenty-seven pre-selected sites. Each site was investigated for one half to two hours and included an examination of as many different biological communities and site types as time permitted. General topography, soil types, site drainage, vegetation communities, fauna, condition, surrounding landscape features and land use were noted and recorded.

(iv) Site Evaluation

Following field reconnaissance, each site was reviewed, compared and evaluated within its vegetation-landform unit. Poor quality sites were deleted and the remainder were denoted as significant sites (see Glossary).

Following further evaluation, candidate nature reserves (see Glossary) were selected from the list of significant sites. Representation, diversity, condition and ecological considerations were weighted equally in the evaluation procedure while special features were considered less important. Land ownership was not considered. A further analysis of candidate nature reserves led to the identification of the best quality sites to represent each dominant vegetation-landform type.

Environmental Data Cards for each significant site and one page nature reserve checksheets for each candidate nature reserve were prepared (Appendix A). Location and boundaries of each significant site were mapped on 1:50,000 topographic maps and all data were placed on file at the Ministry of Natural Resources, Central Region, Parks and Recreation Section.

The preparation of this report involved the compilation of existing data on the natural areas of Site District 6-13. This data included available information on Environmentally Sensitive Areas in the site district, airphoto review, topographic map review, and some contact with individuals knowledgeable about the site district. A limited amount of time was devoted to field checking of sites in order to assess their current condition and the degree of representation offered by each.

The emphasis of this study was directed towards vegetation-landform features. Therefore, areas of high quality wildlife and fisheries habitat, and special sites such as concentrations of rare or endangered flora and fauna, are generally missing unless otherwise a component of a representative vegetation-landform feature.

3. CANDIDATE NATURE RESERVES

The preliminary overview process identified five dominant vegetation-landform features remaining in a relatively natural, undisturbed state. The five types include lakefront marshes, swamps, river valley systems with adjoining uplands and shoreline bluffs. In light of the remnant and disturbed nature of the landscape, suitable sites were not available to represent the drumlinoid features of the South Slope and the post-glacial Lake Iroquois terraces. A partially forested drumlin does, however, occur in two of the candidate nature reserves.

Table 1 summarizes the natural features analysis and nature reserve selection procedure according to physiographic region and vegetation-landform feature. The results of the analysis are presented in the final column - Candidate Nature Reserves Selected to Represent the Missing Features. The locations of the eight candidate nature reserves are shown in Figure 2. Of the total twenty-seven areas field checked, twenty were chosen as significant sites and of these, eight as candidate nature reserves (Table 3). Of the eight candidate nature reserve sites selected, four offer the best representation of the dominant features. Oshawa and LeVay's Marshes are considered to be of equal but different status. Oshawa Marsh is the largest lakefront cattail marsh from Niagara to Presqu'ile and supports the highest concentration of waterfowl along this section of shoreline while LeVay's Marsh is the least disturbed, is landlocked and contains a high diversity of vegetation site types. The best river valley system with adjoining uplands is Shelter Valley which contains the highest diversity of upland and lowland site types and a partially forested drumlin. Finally, the highest and most continuous stretch of lakeshore bluffs in the study area are the Bond Head Bluffs.

The other four candidate nature reserves selected are : Carr Marsh, Clarke Summit Swamp, Soper Valley and Wesleyville Ravines. Carr Marsh is the third lakefront candidate nature reserve marsh chosen; like LeVay's, it is one of the more stable marshes due to its landlocked nature. Although slightly disturbed upstream, it offers a different vegetative composition of marsh types than LeVay's. The least disturbed swamp in the site district is Clarke Summit Swamp which harbours a good variety of vegetative types. Wesleyville Ravines and Soper Valley are two river valley systems selected in addition to Shelter Valley. The Wesleyville Ravines represent one of the smallest, but least disturbed, river valley systems. Soper Valley is the most disturbed of the three sites, but provides a good diversity of lowland and upland site types.

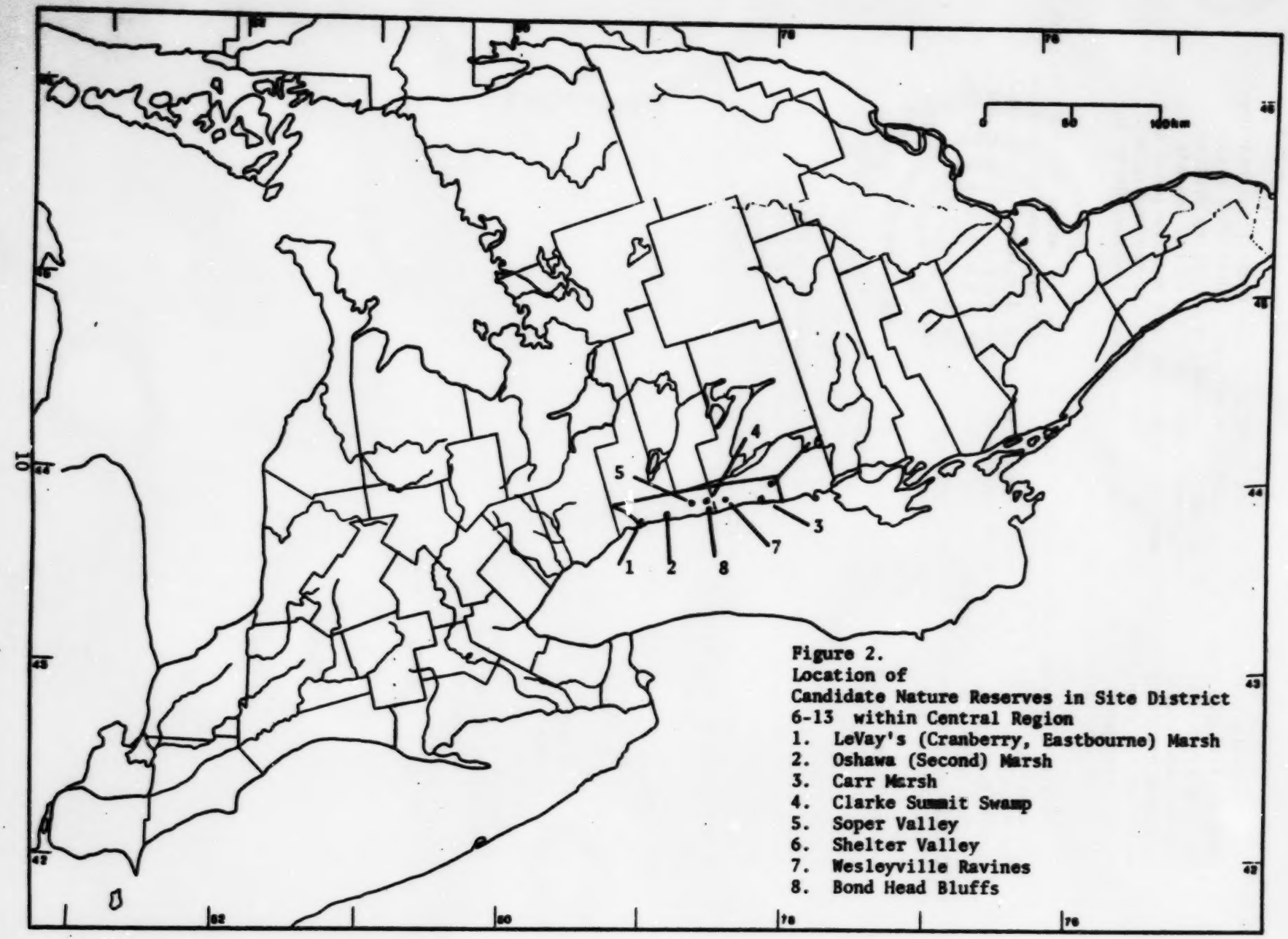


Figure 2.
Location of
Candidate Nature Reserves in Site District
6-13 within Central Region

1. LeVay's (Cranberry, Eastbourne) Marsh
2. Oshawa (Second) Marsh
3. Carr Marsh
4. Clarke Summit Swamp
5. Soper Valley
6. Shelter Valley
7. Wesleyville Ravines
8. Bond Head Bluffs

TABLE 3: LIST OF SIGNIFICANT SITES AND CANDIDATE NATURE RESERVES IN SITE DISTRICT 6-13 WITHIN CENTRAL REGION

VEGETATION-LANDFORM FEATURE AND PHYSIOGRAPHIC REGION	SIGNIFICANT SITE	CANDIDATE NATURE RESERVE
WETLANDS		
Lakefront Marsh		
Iroquois Plain - clay plain	LeVay's Marsh (30M/15 630560) Ontario Hospital Marsh (30M/15 640570) Oshawa Marsh (30M/15 760600) Newcastle Marsh (30M/15 930630) Wesleyville Marsh (30M/16 085660) Willow Beach Marsh (30M/16 110675) Carr Marsh (30M/16 230770)	LeVay's Marsh (30M/15 630560) Oshawa Marsh (30M/15 760600) Carr Marsh (30M/16 230770)
Swamp		
Iroquois Plain - sand plain	Graham Creek Swamp (30M/16 035725) Newtonville Bog (30M/16 030690)	
Iroquois Plain - drumlinized till plain	Clarke Summit Swamp (30M/15 980680)	Clarke Summit Swamp (30M/15 980680)
Southern Slope - drumlinized till plain	Baltimore Creek Swamp (31D/1 305810)	
RIVER VALLEY SYSTEM AND UPLANDS		
Sandplain		
Iroquois Plain - sandplain	Soper Valley (30M/15 860710) Osaca - Ganaraska River (31D/1 050765) Bowmanville Creek (30M/15 827680)	Soper Valley (30M/15 860710)
Drumlinized Till Plain		
Iroquois Plain - drumlinized till plain	Wesleyville Ravines (30M/16 080680)	Wesleyville Ravines (30M/16 080680)
Southern Slope - drumlinized till plain	Shelter Valley (31D/1 378815) Duffin Creek (30M/14E 540670) Eddystone Drumlin (31D/1 385785)	Shelter Valley (31D/1 378815)

TABLE 3: LIST OF SIGNIFICANT SITES AND CANDIDATE NATURE RESERVES IN SITE DISTRICT 6-13 WITHIN CENTRAL REGION

VEGETATION-LANDFORM FEATURE AND PHYSIOGRAPHIC REGION	SIGNIFICANT SITE	CANDIDATE NATURE RESERVE
SHORELINE		
Bluff		
Iroquois Plain - drumlinized till plain	Crysler Point (30M/16 074653) Bond Head Bluffs (30M/15 980635)	Bond Head Bluffs (30M/15 980635)

4. CONCLUSIONS

A total of eight candidate nature reserves were selected to represent the typical vegetation-landform features of Site District 6-13 within Central Region. They include three lakefront marshes - LeVay's, Oshawa and Carr, one swamp - Clarke Summit Swamp, three river valley systems with adjoining uplands - Soper Valley, Shelter Valley and Wesleyville Ravines and one shoreline bluff - Bond Head Bluffs. Priority should be given to LeVay's Marsh, Oshawa Marsh, Shelter Valley and Bond Head Bluffs as they offer the best representation of the dominant features.

These candidate nature reserves require further research to determine the feasibility of their protection over the long term. Land-use designation of the site and surrounding land and other environmental factors (i.e., size of watershed, etc.) effecting present and future stability should be assessed. Candidate nature reserves which can be feasibly managed in a stable condition over the long term, should either be directly acquired by public agencies such as the Ministry of Natural Resources, Conservation Authorities, the Nature Conservancy and/or individual naturalist clubs. Alternatively, the present owners should be encouraged to work cooperatively to protect and manage the area through private land agreements. The significant sites also are valuable ecological areas which should receive protection through district and municipal land-use planning.

No significant sites or candidate nature reserves were identified to represent the post-glacial Lake Iroquois terraces and the drumlinoid hill features of the South Slope. These types comprise a majority of the land area in Site District 6-13.

GLOSSARY

Areas of Natural and Scientific Interest (ANSI): ANSIs are areas of land and water containing natural landscapes or features which have been identified as having values related to protection, natural heritage, scientific study or education. ANSIs may vary in level of significance. The most significant of these, Candidate Nature Reserves in the site district reports, may contribute to the achievement of the Ministry's protection objective. Those which do not contribute to the provincial protection objective are referred to as Significant Sites in the site district report.

Candidate Nature Reserve: Candidate nature reserves are sites selected on a systematic basis to represent the natural features and landscapes of Ontario and to complement other protected zones in the provincial park system. Candidate nature reserves contain the best examples of the landform and vegetation features of each site district; features that may be of widespread or restricted occurrence within the site district. They are selected after comparison and evaluation of significant sites sharing similar features. Each candidate nature reserve possesses sufficient ecological integrity, buffering capacity and size that protection appears to be a viable management strategy.

Physiographic Region: Chapman and Putnam (1973) described and mapped fifty-two minor physiographic regions within southern Ontario. These physiographic regions are areas with recognizable local landform patterns. Map 1 outlines the physiographic regions that fall wholly or partially within the site district.

Significant Site: A site of at least regional significance and representative of the landform and vegetation features of the site district. Chosen after reviewing the background information available on sites of biological importance, airphoto analysis and field checking of selected areas. After final evaluation and comparison of similar significant sites, some were chosen as candidate nature reserves. However, all significant sites are recommended for protection through the land-use planning process.

Site District: A subdivision of a site region, with a characteristic pattern of physiographic features (Hills, 1959). Site districts are small scale map units that segregate substantial areas from each other on the basis of broad landform patterns. Refer to Figure 1.

Site Region: An area of land within which the response of the vegetation to the features of the landform follows a consistent pattern (Hills, 1959). Refer to Figure 1.

APPENDIX A: NATURE RESERVE CHECK-SHEETS AND ENVIRONMENTAL DATA CARDS FOR SIGNIFICANT SITES IN SITE DISTRICT 6-13 WITHIN CENTRAL REGION

	Page Number
WETLANDS	
LAKEFRONT MARSH	
LeVay's (Cranberry, Eastbourne) Marsh (30M/15 635560) - CNR[1]	19,25
Oshawa (Second) Marsh (30M/15 760600) - CNR	21,25
Carr Marsh (30M/16 230770) - CNR	23,27
Ontario Hospital Marsh (30M/15 640570)	25
Newcastle Marsh (30M/15 930630)	26
Wesleyville Marsh (30M/16 085660)	26
Willowbeach Marsh (30M/16 110675)	26
SWAMP	
Clarke Summit Swamp (30M/15 980620) - CNR	29,31
Newtonville Bog (30M/16 030690)	31
Graham Creek Swamp (30M/16 035725)	31
Baltimore Creek Swamp (31D/1 305810)	32
RIVER VALLEY SYSTEMS WITH ADJOINING UPLANDS	
SANDPLAIN	
Soper Valley (30M/15 860710) -CNR	33,35
Bowmanville Creek (30M/15 827680)	35
Osaca-Ganaraska River (31D/1 050765)	35
DRUMLINIZED TILL PLAIN	
Shelter Valley (31D/1 378815) - CNR	37,41
Wesleyville Ravines (30M/16 080680) - CNR	39,41
Duffin Creek (30M/15 540670)	41
Eddystone Drumlin (31D/1 385785)	42
SHORELINE BLUFFS	
Bond Head Bluffs (30M/15 980635) - CNR	43,45
Crysler Point Bluff (30M/16 074653)	45

[1] CNR indicates a candidate nature reserve.

SITE DISTRICT 6-13: WETLANDS - Lakefront Marsh

ONTARIO NATURE RESERVES PROGRAM – LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
LeVay's (Cranberry, Eastbourne) Marsh	Oshawa	30M/15	635560

COUNTY, DISTRICT or REGIONAL MUNICIPALITY: Durham

LOCALITY: Town of Whitby

TOWNSHIP / LOTS / CONCESSIONS:

AREA: 110 acres 45 ha

OWNERSHIP: Central Lake Ontario Conservation Auth.

ADMINISTRATION: same

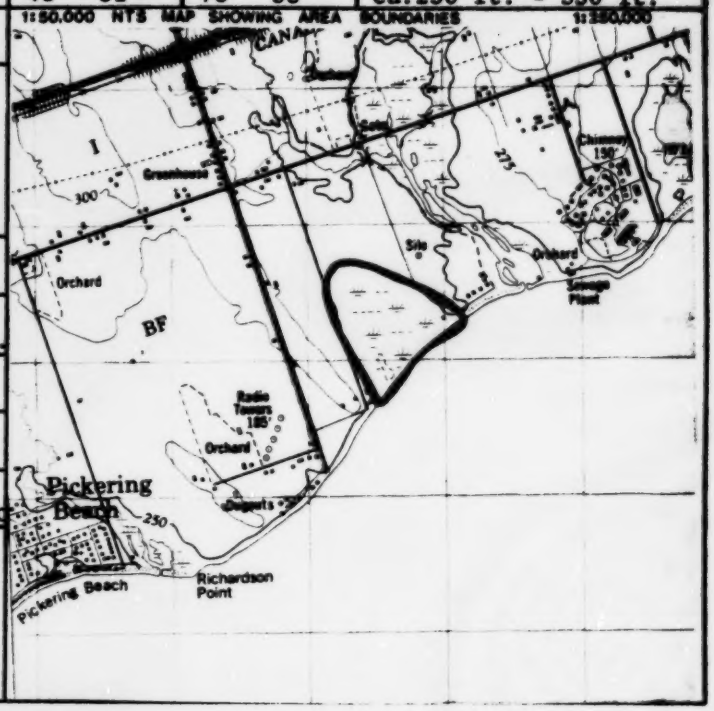
FOREST REGION AND DISTRICT	SITE REGION AND DISTRICT
D-1	6-13
MNR REGION AND DISTRICT	**CONSERVATION AUTHORITY**
Central/Lindsay	Central Lake Ontario

AERIAL PHOTOGRAPHS — BASE MAP: 437784

YEAR	ROLL	FLIGHT LINE	NUMBERS
1971	34	4335	149-150

LAT.	LONG.	ALT. MIN.	ALT. MAX.
43° 51'N	78° 58'W	ca. 250 ft.	350 ft.

1:50,000 NTS MAP SHOWING AREA BOUNDARIES 1:250,000



PHYSICAL AND BIOLOGICAL FEATURES

Lying within the Town of Whitby, LeVay's lakefront marsh is entirely landlocked and fed by surface run-off and spring water from surrounding agricultural fields. A high sand and gravel beach bar separates it from Lake Ontario; there is no outlet. The bar is vegetated with dense balsam poplar - willow. A fringe of alder-willow carr, dogwood thickets and red-silver maple characterize the marsh. The open water of the marsh (8.1h(20 acres)) forms a horseshoe area around a central zone of cattail-bur-reed marsh with sedge meadow. Excellent habitat is provided for migratory and breeding waterfowl and marsh birds.

Of the 11 existing marshes along Lake Ontario's waterfront in 6-13, LeVay's was found to be the most stable example in terms of potential disturbances from land use activities due to its location, small watershed and land-locked nature. It is a good example of a lakefront marsh and has a number of intact site types proceeding from open water to marshland treed fringe. It is owned by the Central Lake Ontario Conservation Authority with the exception of a cottage in the southeast corner. This combination of factors makes it the best lakefront marsh candidate in 6-13.

DATA SHEETS ATTACHED

PHYSICAL DESCRIPTION	☐	SUMMARY SPECIES LISTS	☐
VEGETATION SUMMARY	☐	PHYSICAL FEATURES MAP	☐
EVALUATION SHEET	☐	VEGETATION MAP	☐
COMMUNITY DESCRS.	☐	BIBLIOGRAPHY	☐
COMMUNITY COMP. LISTS	☐	PHOTOGRAPHS	☐

MAJOR INFORMATION SOURCES

Hanna, R., 1980. Airphoto Interpretation; IBP, 1971; Tozer and Richards, 1974; Wainio et al, 1973.

EVALUATION AND PRIORITIES

LeVay's Marsh is the best lakefront marsh in Site District 6-13 based on its high diversity of vegetation and excellent condition, the later reflective of its location, small watershed and landlocked condition.

DATE COMPILED	COMPILER
October 17, 1980	R. Hanna

Ontario Ministry of Natural Resources, Division of Parks, Park Planning Branch, Queen's Park, Toronto, Ontario, M7A 1W3

ONTARIO NATURE RESERVES PROGRAM – LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
Oshawa (Second) Marsh	Oshawa	30M/15	760600

COUNTY, DISTRICT or REGIONAL MUNICIPALITY: Durham

LAT.: 43° 53'N | LONG.: 78° 49'W | ALT. MIN. MAX.: ca.250 ft - 300 ft.

LOCALITY: Mouth of Harmony Creek, Town of Oshaw

TOWNSHIP | LOTS | CONCESSIONS

AREA: 300 acres 120 ha

OWNERSHIP

ADMINISTRATION

FOREST REGION AND DISTRICT: D-1

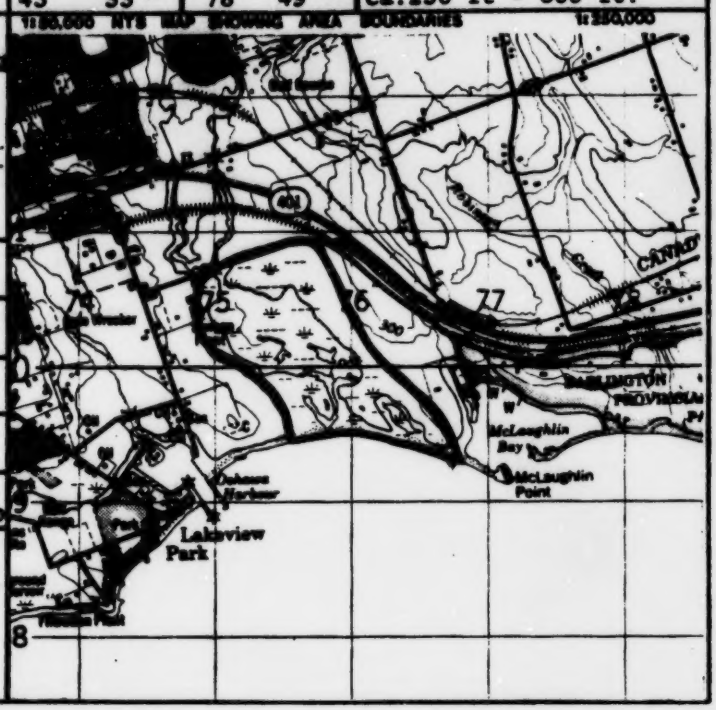
SITE REGION AND DISTRICT: 6-13

MNR REGION AND DISTRICT: Central-Lindsay

CONSERVATION AUTHORITY: Central Lake Ontario

AERIAL PHOTOGRAPHS — BASE MAP: 438784

YEAR	ROLL	FLIGHT LINE	NUMBERS
1978	41	4361	128-130



PHYSICAL AND BIOLOGICAL FEATURES

Located at the mouth of Harmony Creek, in the City of Oshawa, Second Marsh offers prime breeding and migratory waterfowl habitat. Its main body is composed almost entirely of cattail-bur-reed marsh and sedge mat with many areas of open water. Willow carr and ash scrub forest encircle the edge. An ash-willow-balsam poplar floodplain forest occurs upstream. The sand, gravel and pebble beach bar is breached by a single outlet to Lake Ontario. Willow and balsam poplar are found on the storm beach.

Second Marsh is often described as "the finest example of a cattail marsh located on the north shore of Lake Ontario between Niagara and Presqu'il " (John, 1976, in Wainio et al, 1973). It supports, by far , the highest concentration of waterfowl along this section of the shoreline. However, immediately to the north lies the urban core of the city of Oshawa; abandoned farmland surrounds the marsh's west and east side with an industrial complex in the northwest corner. Darlington Provincial Park lies a quarter of a kilometre eastwardly. The sewage treatment plant for the City is located in the northwest corner of the marsh and an emergency outlet discharges into the marsh. Additionally, during construction of the plant, the marsh was reduced by 83h (204 acres) as a result of filling. A proposal to construct a harbour in the marsh is currently under consideration. The quality of Oshawa Marsh is deteriorating due to upstream urban development and the discarge of polluted stormwater run-off into the aquatic system. In light of the above, the feasibility of preserving this marsh must first be evaluated before considering its inclusion into the nature reserve system.

DATA SHEETS ATTACHED

PHYSICAL DESCRIPTION	☐	SUMMARY SPECIES LISTS	☐
VEGETATION SUMMARY	☐	PHYSICAL FEATURES MAP	☐
EVALUATION SHEET	☐	VEGETATION MAP	☐
COMMUNITY DESCRS.	☐	BIBLIOGRAPHY	☐
COMMUNITY COMP. LISTS	☐	PHOTOGRAPHS	☐

MAJOR INFORMATION SOURCES

Collins, 1980; Hanna, 1980, Airphoto Interpretation; IBP, 1971; Tozer and Richards, 1974; Wainio et al, 1973.

EVALUATION AND PRIORITIES

Although highly disturbed, Oshawa Marsh is the largest lakefront cattail marsh in Site District 6-13 and supports the highest concentration of waterfowl along this section of Lake Ontario.

DATE COMPILED	COMPILER
October 17, 1980	R. Hanna

Ontario Ministry of Natural Resources, Division of Parks, Park Planning Branch, Queen's Park, Toronto, Ontario, M7A 1W3

SITE DISTRICT 6-13: WETLANDS - Lakefront Marsh

ONTARIO NATURE RESERVES PROGRAM - LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
Carr Marsh	Port Hope	30M/16	230700

COUNTY, DISTRICT or REGIONAL MUNICIPALITY: Northumberland

LAT. 43° 57'N | LONG. 78° 14'W | ALT. MIN. ca. 250 ft - MAX. 300 ft.

LOCALITY: Between Port Hope and Cobourg

TOWNSHIP | LOTS | CONCESSIONS

AREA: 150 acres 60 ha

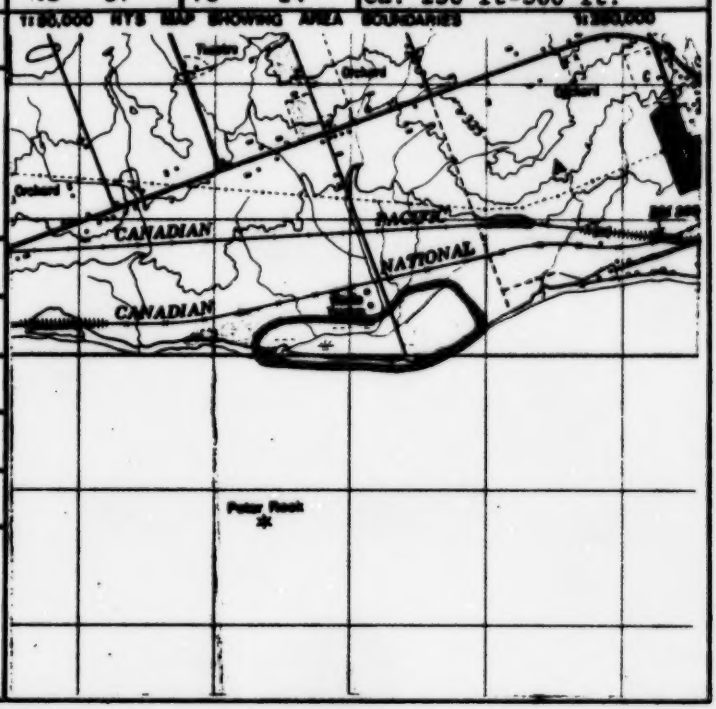
OWNERSHIP

ADMINISTRATION

FOREST REGION AND DISTRICT	SITE REGION AND DISTRICT
D-1	6-13
MNR REGION AND DISTRICT	CONSERVATION AUTHORITY
Central-Lindsay	Ganaraska

AERIAL PHOTOGRAPHS — BASE MAP: 438781

YEAR	ROLL	FLIGHT LINE	NUMBERS
1971	33	4439	66-67



PHYSICAL AND BIOLOGICAL FEATURES

Similar to LeVay's, Carr Marsh is also fed by surface run-off and is separated from the lake by a low sand and cobble beach bar. Wave action over the bar provides some water exchange with Lake Ontario. Scattered willow seedlings and *Potentilla anserina* grow sparsely on the bar. Semi-closed bur-reed-cattail marsh, sedge meadow and floating alder carr with some marginal alder scrubland comprise the marsh vegetation. The marsh offers excellent migratory and breeding waterfowl habitat. Alder-cedar swamp and cedar lowland is found on it east side. Situated between Port Hope and Cobourg, it is surrounded by agricultural fields with a railway with three radio towers near its northern edge.

Carr Marsh was selected as one of the three candidate nature reserve marshes in Site District 6-13 based on its high quality and present condition. Like LeVay's Marsh (30M/15 630560), it is landlocked and has a small watershed which tends to reduce its susceptibility to pollution/sedimentation from upstream sources.

DATA SHEETS ATTACHED

PHYSICAL DESCRIPTION	☐	SUMMARY SPECIES LISTS	☐
VEGETATION SUMMARY	☐	PHYSICAL FEATURES MAP	☐
EVALUATION SHEET	☐	VEGETATION MAP	☐
COMMUNITY DESCRS.	☐	BIBLIOGRAPHY	☐
COMMUNITY COMP. LISTS	☐	PHOTOGRAPHS	☐

MAJOR INFORMATION SOURCES

Hanna, 1980. Airphoto Interpretation; IBP, 1971.

EVALUATION AND PRIORITIES

The relatively good condition, high diversity of vegetation and small watershed of Carr Marsh make it one of the best lakefront marshes in Site District 6-13.

DATE COMPILED	COMPILER
October 17, 1980	R. Hanna

Ontario Ministry of Natural Resources, Division of Parks, Park Planning Branch, Queen's Park, Toronto, Ontario, M7A 1W3

	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	LeVay's Marsh	30M/15	635560

BRIEF DESCRIPTION

Freshwater marsh in the Town of Whitby formed behind Lake Ontario barrier sand bar densely vegetated with balsam poplar-willow. Fed by surface run-off. 45 h(110 acres) of open water; cattail marsh, alder-willow carr and ash-cherry-hawthorne scrub. Migrating and breeding waterfowl. Surrounded by agricultural fields. One summer home in southeast corner of marsh. A candidate nature reserve. Also known as Cranberry or Eastbourne Marsh.

SOURCES

Hanna, 1980, Airphoto Interpetation; IBP, 1971

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 12/80			Hanna/80

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, M7A 1W3

	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Ontario Hospital Marsh	30M/15	640570

BRIEF DESCRIPTION

55 h (140 acres) marsh in the Town of Whitby formed in shallow broad river valley of Lynde Creek. Separated from Lake Ontario by a sand barrier beach with one outlet. Bar contains willow and ash. Open body of water with fringe of cattail marsh, sedge meadow, alder-willow-ash carr. Closed cattail marsh and black ash-silver maple-willow fringe upstream. Breeding and migrating waterfowl. Easthourne community on west side; Oshawa Hospital and small sewage plant on east side.

SOURCES

Hanna, 1980. Airphoto Interpretation; IBP, 1971

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 12/80			Hanna/80

ONTARIO NATURE RESERVES PROGRAM
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PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, M7A 1W3

	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	X	Oshawa (Second) Marsh	30M/15	760600

BRIEF DESCRIPTION

120h (300 acre) marsh in the City of Oshawa formed within widened Harmony Creek Valley. Separated from Lake Ontario by sand and pebble barrier beach with 1 outlet. Bar sparsely vegetated with willow-balsam poplar. Open body of water with cattail marsh, sedge meadow, willow shrub carr. Willow-balsam poplar-ash floodplain forest upstream. Supports largest number of breeding and migrating waterfowl along Lake Ontario from Niagara to Presqu'ile. Sewage plant in north end of marsh. Proposed harbour. A candidate nature reserve.

SOURCES

Hanna, 1980. Airphoto Interpretation; IBP, 1971

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 11/80			Hanna/80

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ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, M7A 1W3

	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Newcastle Marsh	30M/15	930630

20h (50 acre) marsh at mouth of Wilmot Creek, southwest of New Castle. Separated from Lake Ontario by a sparsely vegetated shingle bar; 1 outlet. Open body of water with cattail-bur-reed marsh, sedge meadow, willow carr fringe. Black ash floodplain woods upstream. Surrounded by agricultural fields. Breeding and migratory waterfowl.

SOURCES

Hanna, 1980. Airphoto Interpretation; IBP, 1971

FIELD SURVEY DATES	EARTH RESOURCE CHECK SHEET	LIFE RESOURCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 11/80			Hanna/80

ONTARIO NATURE RESERVES PROGRAM
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ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, ONTA 1W3

	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Wesleyville Marsh	30M/16	085660

35h (85 acre) lakefront marsh located at mouth of creek downstream from Wesleyville. Open water marsh with bur-reed-sedge-cattail-bulrush-sweet flag fringe. Surrounded by alder carr and cedar-yellow birch-black ash swamp. Breeding and migrating waterfowl. Separated from Lake Ontario by a sand and cobble beach bar vegetated with willow. Lies within Ontario Hydro's Wesleyville Generating Station property.

SOURCES

Hanna, 1980. Airphoto Interpretation; Ontario Hydro, 1979

FIELD SURVEY DATES	EARTH RESOURCE CHECK SHEET	LIFE RESOURCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 11/80			Hanna/80

ONTARIO NATURE RESERVES PROGRAM
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PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, ONTA 1W3

	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Willowbeach Marsh	30M/16	110675

15 h (38 acre) marsh formed at mouth of creek, downstream from Port Britain. Separated from Lake Ontario by barrier beach bar with 1 outlet. Open body of water with cattail-bulrush marsh, sedge meadow, marginal alder-willow carr, scrub ash-balsam poplar woods. North end dissected by old hydro line on fill. Several homes adjacent to marsh. Breeding and migrating waterfowl.

SOURCES

Hanna, 1980. Airphoto Interpretation; IBP, 1971

FIELD SURVEY DATES	EARTH RESOURCE CHECK SHEET	LIFE RESOURCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 11/80			Hanna/80

ONTARIO NATURE RESERVES PROGRAM
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PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, ONTA 1W3

SITE DISTRICT 6-13: WETLANDS - Lakefront Marsh

	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	X	Carr Marsh	30M/16	230700

Lake Ontario marsh fed by surface run-off. Separated from Lake Ontario by barrier beach (sand and cobble bar). Sparsely vegetated with alder-willow and *Potentilla anserina*. 60 h (150acres) of closed bur-reed-cattail marsh, sedge meadow, floating alder carr and marginal alder scrubland. Adjacent alder-cedar and cedar lowlands. Surrounded by agricultural fields. Radio tower and railway line on north edge. Breeding and migrating waterfowl. Located between Port Hope and Cobourg. A candidate nature reserve

SOURCES

Hanna, 1980. Airphoto Interpretation; IBP, 1971

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 10, 1980			Hanna, 1980

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, ONTA 1W3

1981

SITE DISTRICT 6-13: WETLANDS - Swamp

ONTARIO NATURE RESERVES PROGRAM – LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
Clarke Summit Swamp	Oshawa	30M/15	980690

COUNTY, DISTRICT or REGIONAL MUNICIPALITY: Durham

LOCALITY: 4km NE of New Castle

TOWNSHIP / LOTS / CONCESSIONS:

AREA: 240 acres 95 ha

OWNERSHIP:

ADMINISTRATION:

FOREST REGION AND DISTRICT: D-1

SITE REGION AND DISTRICT: 6-13

MNR REGION AND DISTRICT: Central-Lindsay

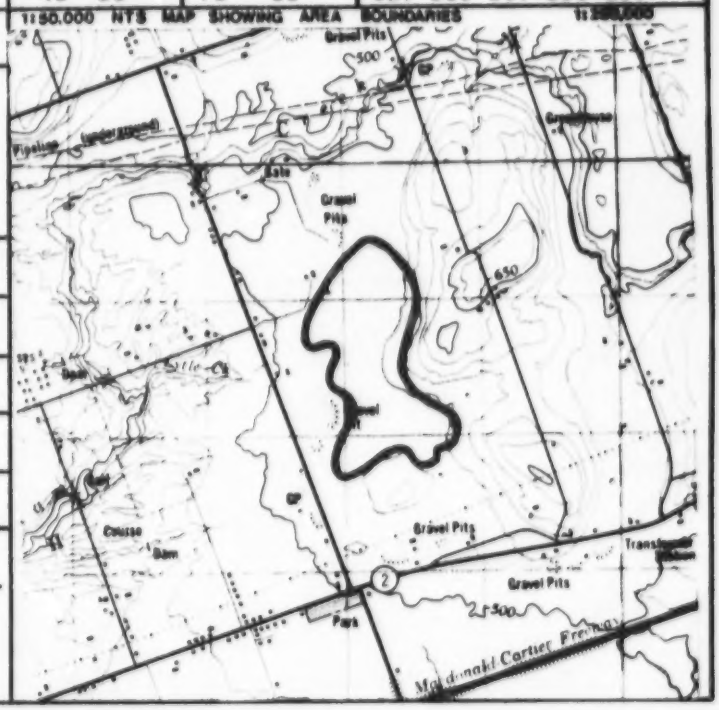
CONSERVATION AUTHORITY: Ganaraska

AERIAL PHOTOGRAPHS — BASE MAP: 438783

YEAR	ROLL	FLIGHT LINE	NUMBERS
1971	33	4439	56-58

LAT.	LONG.	ALT. MIN.	ALT. MAX.
43° 56'N	78° 38'W	ca. 500 ft.	-550 ft.

1:50,000 NTS MAP SHOWING AREA BOUNDARIES



PHYSICAL AND BIOLOGICAL FEATURES

Clarke Summit Swamp is a broad, poorly drained, shallow basin in a gently undulating till plain; it is surrounded by a sandy post-glacial shoreline. The main vegetation types found within the swamp are silver maple - white birch - basswood - mountain maple and cedar - yellow birch - black ash. A narrow upland fringe on the west side is characterized by red oak - basswood - sugar maple - cedar. The surrounding uplands are farmed with the exception of the abandoned gravel pits on the west side.

Based on its condition and diversity, Clarke Summit Swamp was selected as the best representation of a swamp in the site district.

DATA SHEETS ATTACHED

PHYSICAL DESCRIPTION	☐	SUMMARY SPECIES LISTS	☐
VEGETATION SUMMARY	☐	PHYSICAL FEATURES MAP	☐
EVALUATION SHEET	☐	VEGETATION MAP	☐
COMMUNITY DESCRS.	☐	BIBLIOGRAPHY	☐
COMMUNITY COMP. LISTS	☐	PHOTOGRAPHS	☐

MAJOR INFORMATION SOURCES

Hanna, 1980. Airphoto Interpretation; IBP, 1972

EVALUATION AND PRIORITIES

Clarke Summit Swamp is the least disturbed swamp in Site District 6-13 and contains a good diversity of vegetation types.

DATE COMPLETED	COMPILER
October 17, 1980	R. Hanna

Ontario Ministry of Natural Resources, Division of Parks, Park Planning Branch, Queen's Park, Toronto, Ontario, M7A 1W3

SITE DISTRICT 6-13: WETLANDS - Swamp

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	X	Clarke Summit Swamp	30M/15	980690

BRIEF DESCRIPTION

95 h (240 acre) swamp located 6 km northeast of Newcastle. Young closed cedar swamp with mountain maple, red maple, yellow birch and a young to intermediate aged silver maple swamp. Narrow band of mesic red oak-basswood-sugar maple on western slope. Abandoned gravel pits located adjacent to western and southern sides. Remainder surrounded by agricultural fields. A candidate nature reserve.

SOURCES

Hanna, 1980. Airphoto Interpretation; IBP, 1972

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 12, 1980			Hanna, 1980

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK QUEEN'S PARK, TORONTO, M7A 1W3

1981

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	X	Newtonville Bog	30M/16	030690

BRIEF DESCRIPTION

123 h (304 acre) swamp-bog complex drained by small creek. Dominated by young, semi-closed, wet silver maple-elm-black ash swamp. 1.6 h (4 acre) bog consists of open tamarack-cedar-black spruce with leatherleaf-huckleberry thickets. Bog surrounded by red maple-yellow birch-cedar-balsam fir lowland forest. Several regionally rare plants. 2 km east of Newtonville. West side dissected by concession road.

SOURCES

Hanna, 1980. Airphoto Interpretation; IBP, 1972

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 13, 1980			Hanna, 1980

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK QUEEN'S PARK, TORONTO, M7A 1W3

1981

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	X	Graham Creek Swamp	30M/16	035725

BRIEF DESCRIPTION

Lowland system located in Graham Creek Valley, 4 km northeast of Newtonville. Dissected by concession roads. Dominant vegetation type is cedar lowland and cedar-tamarack-trembling aspen swamp.

SOURCES

Hanna, 1980. Airphoto Interpretation

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 13, 1980			Hanna, 1980

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK QUEEN'S PARK, TORONTO, M7A 1W3

SITE DISTRICT 6-13: WETLANDS - Swamp

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	X	Baltimore Creek Swamp	31D/1	305810

BRIEF DESCRIPTION

Wet to wet-mesic cedar-white birch-black ash floodplain forest, very wet black ash-alder-cattail scrub marsh and wet, open tamarack-balsam fir-white birch swamp characterize Baltimore Creek Valley. 3 km northeast of Baltimore. Highway 45 bissects the valley. Several concession roads cross the valley. Some residential areas.

SOURCES: Hanna, 1980. Airphoto Interpretation; Northumberland Co. ESA, 1976

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 13, 1980			Hanna, 1980

ONTARIO NATURE RESERVES PROGRAM
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ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR WHITNEY BLOCK, QUEEN'S PARK, TORONTO, M7A 1W3

1981

SITE DISTRICT 6-13: RIVER VALLEY SYSTEMS WITH ADJOINING UPLANDS - Drumlinized Till Plain

ONTARIO NATURE RESERVES PROGRAM – LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
Soper Valley	Oshawa	30M/15	860710

COUNTY, DISTRICT or REGIONAL MUNICIPALITY: Durham

LAT.: 43° 58'N | LONG.: 78° 41'W | ALT. MIN.–MAX.: ca. 425 ft.-500 ft.

LOCALITY: North of Bowmanville

TOWNSHIP | LOTS | CONCESSIONS

AREA: 295 acres 130 ha

OWNERSHIP

ADMINISTRATION

FOREST REGION AND DISTRICT: D-1

SITE REGION AND DISTRICT: 6-13

MNR REGION AND DISTRICT: Central-Lindsay

CONSERVATION AUTHORITY: Central Lake Ontario

AERIAL PHOTOGRAPHS — BASE MAP: 438783

YEAR	ROLL	FLIGHT LINE	NUMBERS
1971	28	4340	37-38

PHYSICAL AND BIOLOGICAL FEATURES

Lying 4 km (2.5 miles) north of Bowmanville, Soper Valley is drained by Soper and Mackie's Creeks. It is surrounded by agricultural lands. A two lane highway dissects its northern end while a gravel concession road crosses the valley in the centre. Gravel pits are found on its west side. Cedar, cedar-white birch-trembling aspen-red maple and yellow birch-cedar-hemlock-white birch typify its floodplain, lowland and swamp areas respectively. Its valley walls are dominated by hemlock-sugar maple-cedar. Mackie's Creek uplands contain young to semi-mature mesic sugar maple-beech-white ash-hemlock woods. A remnant beach ridge occurs in the nothern section.

Soper Valley provides fair to good representation of the various site types-swamp, lowland, slope and upland - typical of the site district. It is one of the least disturbed examples available.

DATA SHEETS ATTACHED

PHYSICAL DESCRIPTION	☐	SUMMARY SPECIES LISTS	☐
VEGETATION SUMMARY	☐	PHYSICAL FEATURES MAP	☐
EVALUATION SHEET	☐	VEGETATION MAP	☐
COMMUNITY DESCRS.	☐	BIBLIOGRAPHY	☐
COMMUNITY COMP. LISTS	☐	PHOTOGRAPHS	☐

MAJOR INFORMATION SOURCES

CLOCA ESA, 1978; Hanna, 1980. Airphoto Interpretation

EVALUATION AND PRIORITIES

Soper Valley provides fair to good representation of the various site types - swamp, lowlands, slope and upland - typical of Site District 6-13.

DATE COMPILED	COMPILER
October 17, 1980	R. Hanna

Ontario Ministry of Natural Resources, Division of Parks, Park Planning Branch, Queen's Park, Toronto, Ontario, M7A 1W3

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Bowmanville Creek	30M/15	827680

BRIEF DESCRIPTION:
Narrow, forested river valley corridor along Bowmanville Creek from south of Hampton to 2 km north of Bowmanville Contains range of upland, valley wall, lowland and floodplain forests. Agricultural fields, orchards and gravel pits occur on both sides; residential area on east side.

SOURCES:
Hanna, 1980. Airphoto Interpretation; CLOCA, 1978

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 10/80			Hanna/80

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, ONTA 1W3

1981

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Soper Valley	30M/15	860710

BRIEF DESCRIPTION:
River valley drained by Soper and Mackie's Creek, 4 km north of Bowmanville. Cedar-white birch-yellow birch-hemlock-red maple lowland/swamp forests. Hemlock-sugar maple-cedar valley walls. Mackie's Creek uplands are sugar maple-beech-hemlock-ash. Remnant beach ridge. Surrounded by agriculture fields. Two lane highway dissects north end. Gravel pits on west side. A candidate nature reserve.

SOURCES:
Hanna, 1980. Airphoto Interpretation; CLOCA ESA, 1978

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 12/80			Hanna/80

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1981

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Osaca - Ganaraska River	31D/1	050765

BRIEF DESCRIPTION:
404 ha (999 acre) river valley complex consists of cedar with hemlock-crack willow floodplain forest. Patches of mesic, deciduous sugar maple-ironwood valley wall woods. Borders on town of Osaca. Surrounded by agricultural fields. Skunk cabbage, a regionally rare species, present

SOURCES:
Hanna, 1980·Airphoto Interpretation; Northumberland Co. ESA, 1976

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 13/80			Hanna/80

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

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3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, ONTA 1W3

1981

ONTARIO NATURE RESERVES PROGRAM – LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
Shelter Valley	Rice Lake	31D/1	378815

COUNTY, DISTRICT or REGIONAL MUNICIPALITY: Northumberland

LAT. 44° 03'N | LONG. 78° 02'W | ALT. MIN. ca. 600 ft. MAX. 850 ft.

LOCALITY: South of Centreton

TOWNSHIP | LOTS | CONCESSIONS

AREA: 556 acres 225 ha

OWNERSHIP

ADMINISTRATION

FOREST REGION AND DISTRICT: L-1

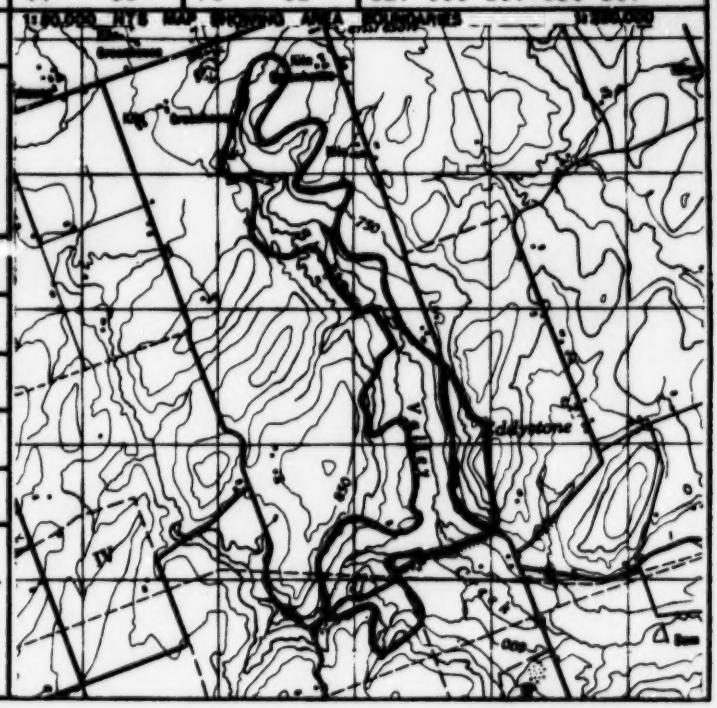
SITE REGION AND DISTRICT: 6-13

MNR REGION AND DISTRICT: Central-Lindsay

CONSERVATION AUTHORITY: Lower Trent

AERIAL PHOTOGRAPHS — BASE MAP: 441781

YEAR	ROLL	FLIGHT LINE	NUMBERS
1971		4402	105-106
1971		4403	163-164



PHYSICAL AND BIOLOGICAL FEATURES

A variety of upland, valley wall and lowland/swamp vegetation types characterize the Shelter Valley river system. It rises rapidly from west of Eddystone in the south to meet the south slope of the Oak Ridges Moraine at Centreton in the north. The moderately sloping valley walls and uplands are dominated by hemlock-white birch-large-toothed aspen-cedar and sugar maple-beech-red oak forest types. Cedar-red maple and cedar-hemlock lowland and open cedar-dogwood-tamarack swamp are found in the floodplain. On the southeast side, a partially forested drumlin, 30 m (100 feet) high, is wooded with young sugar maple-large-toothed aspen and larger white pine-red oak. A two-lane road runs along the west edge separating the drumlin from the valley.

As most of the drumlinized landscape including drumlin fields of the Southern Slope is farmed; only river systems and scattered woodlots remain.. Shelter Valley was chosen as a good representation of the diversity of scattered types of upland forest which one predominated and includes a relatively rare feature, a partially forested drumlin. The river valley lowlands are a common feature in this area.

DATA SHEETS ATTACHED

PHYSICAL DESCRIPTION	☐	SUMMARY SPECIES LISTS	☐
VEGETATION SUMMARY	☐	PHYSICAL FEATURES MAP	☐
EVALUATION SHEET	☐	VEGETATION MAP	☐
COMMUNITY DESCRS.	☐	BIBLIOGRAPHY	☐
COMMUNITY COMP. LISTS	☐	PHOTOGRAPHS	☐

MAJOR INFORMATION SOURCES

Hanna, 1980. Airphoto Interpretation.

EVALUATION AND PRIORITIES

Shelter Valley contains a good diversity of upland, valley wall, lowland and swamp vegetative types representative of Site District 6-13 and includes a partially forested drumlin.

DATE COMPILED	COMPILER
October 20, 1980	R. Hanna

Ontario Ministry of Natural Resources, Division of Parks, Park Planning Branch, Queen's Park, Toronto, Ontario, M7A 1W3

ONTARIO NATURE RESERVES PROGRAM - LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
Wesleyville Ravines	Port Hope	30M/16	080680

COUNTY, DISTRICT or REGIONAL MUNICIPALITY: Durham

LAT.: 43° 56'N | LONG.: 78° 25'W | ALT. MIN.: ca. 375 ft. | ALT. MAX.: 475 ft.

LOCALITY: North of Wesleyville

TOWNSHIP | LOTS | CONCESSIONS

AREA: 250 acres | 100 ha

OWNERSHIP

ADMINISTRATION

FOREST REGION AND DISTRICT: D-1

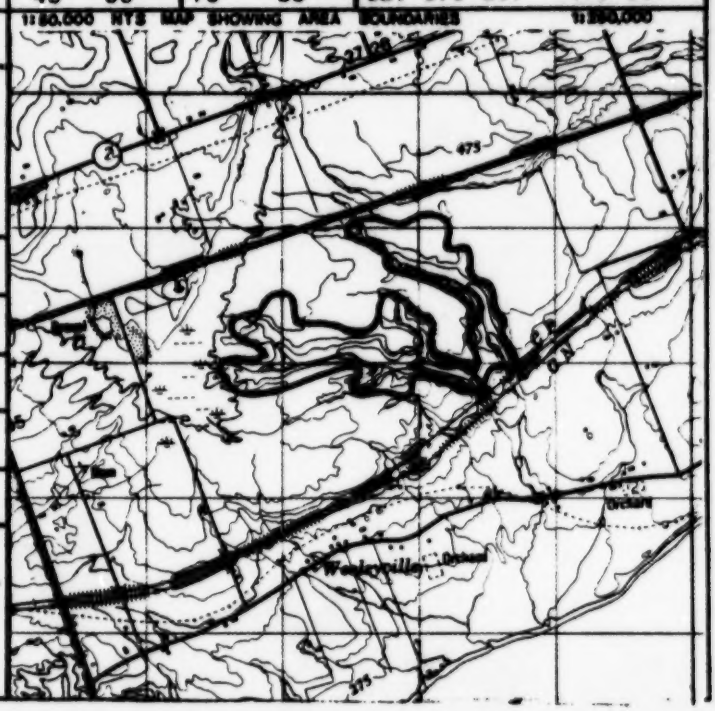
SITE REGION AND DISTRICT: 6-13

MNR REGION AND DISTRICT: Central-Lindsay

CONSERVATION AUTHORITY: Ganaraska

AERIAL PHOTOGRAPHS — BASE MAP: 438782

YEAR	ROLL	FLIGHT LINE	NUMBERS
1971	77	4339	8-10



PHYSICAL AND BIOLOGICAL FEATURES

Two forested ravines north of Wesleyville in the north end of the proposed Ontario Hydro Wesleyville "B" Generating Station Site comprise this site. A diversity of young to semi-mature upland, valley wall and lowland/swamp vegetation types, specifically hemlock-red oak-sugar maple-beech and large-toothed aspen-white birch-white pine-sugar maple valley wall forests, upland sugar maple-red oak, lowland cedar-hemlock, and cedar-yellow birch seepage swamp. The Wesleyville ravines are currently surrounded by agricultural fields and an inactive Boy Scout camp.

Natural areas are scarce on the Iroquois Plain's drumlinized till plain. While there is little chance for representation of drumlinoidal topography, Wesleyville Ravines offers an excellent representation of the upland/lowland types found in the remnant river valley systems and a small portion of a drumlinized hill.

DATA SHEETS ATTACHED

PHYSICAL DESCRIPTION	☐	SUMMARY SPECIES LISTS	☐
VEGETATION SUMMARY	☐	PHYSICAL FEATURES MAP	☐
EVALUATION SHEET	☐	VEGETATION MAP	☐
COMMUNITY DESCRS.	☐	BIBLIOGRAPHY	☐
COMMUNITY COMP. LISTS	☐	PHOTOGRAPHS	☐

MAJOR INFORMATION SOURCES

Hanna, 1980. Airphoto Interpretation;
Ontario Hydro, 1979.

EVALUATION AND PRIORITIES

As one of the least disturbed river valley systems in Site District 6-13, the Wesleyville Ravines offer an excellent representation of upland, valley wall, lowland and swamp vegetation types and include a small portion of drumlinoidal hills.

DATE COMPILED	COMPILER
October 20, 1980	R. Hanna

Ontario Ministry of Natural Resources, Division of Parks, Park Planning Branch, Queen's Park, Toronto, Ontario, M7A 1W3

SITE DISTRICT 6-13: RIVER VALLEY SYSTEMS WITH ADJOINING UPLANDS - Drumlinized Till Plain

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	X	Duffin Creek	30M/14	540670

BRIEF DESCRIPTION

River valley system along Duffin Creek from Greenwood, 3 km north. Surrounded by agricultural fields; golf course on east side, several homes on west side. Dissected by a concession road. Mainly lowland cedar types with some upland components.

SOURCES

Hanna, 1980. Airphoto Interpretation.

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 12, 1980			Hanna, 1980

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3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, M7A 1W3

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	X	Wesleyville Ravines	30M/16	080680

BRIEF DESCRIPTION

Two 36 h (89 acre) wooded ravines situated north of Wesleyville in the north end of the proposed Wesleyville "B" Generating Station site. Surrounded by agricultural fields. Hemlock-red oak-sugar maple-beech-semi mature woods dominate the smaller ravine. The largest ravine contains upland sugar maple-beech-red oak, valley wall white pine-large tooth aspen-white birch and lowland cedar-yellow birch. A candidate nature reserve.

SOURCES

Hanna, 1980.Airphoto Interpretation; Ontario Hydro,1979

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 11, 1980			Hanna, 1980

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EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	X	Shelter Valley	31D/1	375815

BRIEF DESCRIPTION

River valley system along Shelter Creek from Centreton south 3 km. Valley wall hemlock-white birch-cedar-large toothed aspen, upland sugar maple-beech, lowland cedar and cedar-dogwood-tamarack swamp. Site contains a partially forested drumlin with young sugar maple-large-toothed aspen and larger white pine-red oak. Two-lane road crosses southeastern section of site, west of the drumlin. A candidate nature reserve.

SOURCES

Hanna, 1980. Airphoto Interpretation

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 12, 1980			Hanna, 1980

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3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, M7A 1W3

SITE DISTRICT 6-13: RIVER VALLEY SYSTEMS WITH ADJOINING UPLANDS - Drumlinized Till Plain

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Eddystone Drumlin	31D/1	385785

BRIEF DESCRIPTION

This site represents a partially forested drumlin. The drumlin is 1.5 km and 0.5 km wide. The north westerly slope is paralleled by a two lane road and vegetated with young sugar maple-white birch-black cherry and larger white pine-beech. The south easterly slope is farmed. The site lies 3 km south of Eddystone. Three homes along road edge.

SOURCES

Hanna, 1980. Airphoto Interpretation

FIELD SURVEYED	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 10/80			Hanna/80

ONTARIO NATURE RESERVES PROGRAM
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3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, M7A 1W3

1981

ONTARIO NATURE RESERVES PROGRAM – LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
Bond Head Bluffs	Oshawa/Port Hope	30M/15&16	980635

COUNTY, DISTRICT or REGIONAL MUNICIPALITY: Durham

LOCALITY: Bond Head to Bouchette Point

TOWNSHIP / LOTS / CONCESSIONS:

AREA: 350 acres 140 ha

OWNERSHIP:

ADMINISTRATION:

FOREST REGION AND DISTRICT	SITE REGION AND DISTRICT
D-1	6-13
MNR REGION AND DISTRICT	**CONSERVATION AUTHORITY**
Central-Lindsay	Ganaraska

AERIAL PHOTOGRAPHS — BASE MAP: 438783

YEAR	ROLL	FLIGHT LINE	NUMBERS
1971	58	4337	60-64

LAT.	LONG.	ALT. MIN.	ALT. MAX.
43° 54'N	78° 32'W	ca. 250 ft.	375 ft.

1:50,000 NTS MAP SHOWING AREA BOUNDARIES 1:250,000

PHYSICAL AND BIOLOGICAL FEATURES

Continuous post-glacial Lake Iroquois shoreline cliffs along Lake Ontario from Bond Head to west of Bouchette Point characterize this site. The bluffs are 46 m (150 feet) high and vertical for most of their length. The less steep valley portions are vegetated with open early successfional apple-hawthorne-choke cherry while willow-white birch-basswood-cedar woods are established in the lower stable portions. The tableland is generally agricultural fields and farm homes; a railway line runs adjacent to the shoreline, along most of the site.

Varying from 8 to 46 m (25 to 150 feet) in height, the Lake Ontario bluffs which are interrupted by numerous lakefront marshes and creek valley system form the typical shoreline feature of the site district. The site selected represents the highest, continuous section with vegetated portions in 6-13.

DATA SHEETS ATTACHED

PHYSICAL DESCRIPTION	☐	SUMMARY SPECIES LISTS	☐
VEGETATION SUMMARY	☐	PHYSICAL FEATURES MAP	☐
EVALUATION SHEET	☐	VEGETATION MAP	☐
COMMUNITY DESCRS.	☐	BIBLIOGRAPHY	☐
COMMUNITY COMP. LISTS	☐	PHOTOGRAPHS	☐

MAJOR INFORMATION SOURCES

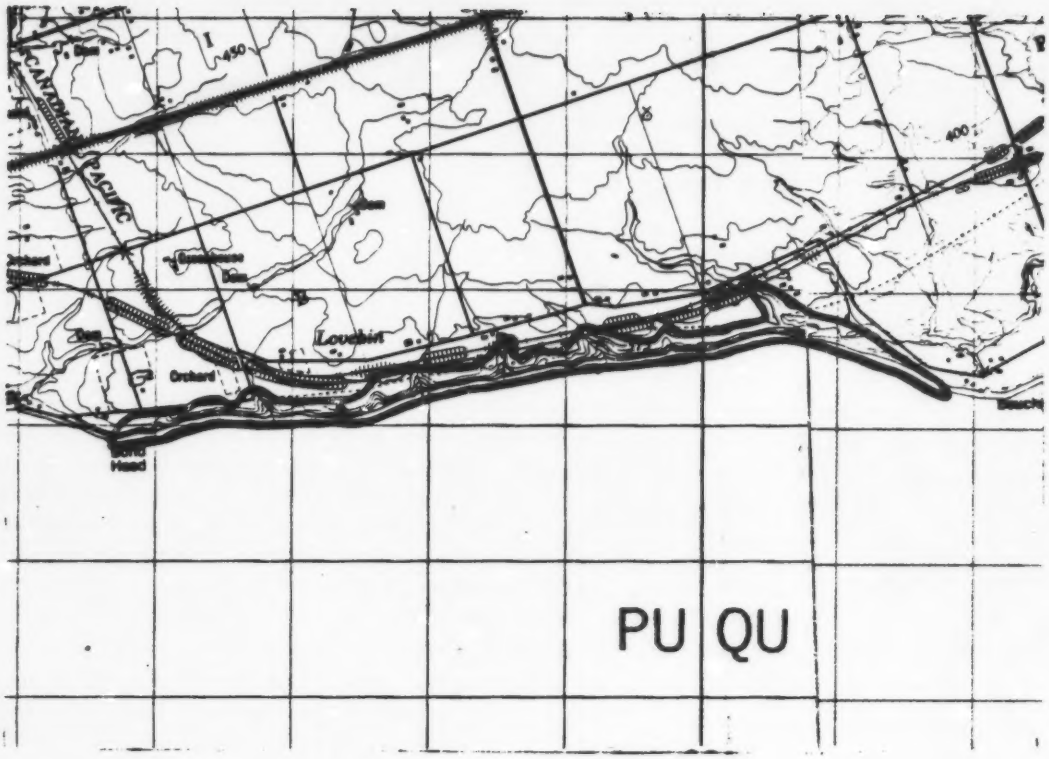
Hanna, 1980. Airphoto Interpretation

EVALUATION AND PRIORITIES

Bond Head Bluffs represent the largest and most continuous section of shoreline bluffs with vegetated portions in Site District 6-13.

DATE COMPILED	COMPILER
October 20, 1980	R. Hanna

Ontario Ministry of Natural Resources, Division of Parks, Park Planning Branch, Queen's Park, Toronto, Ontario. M7A 1W3


CANADIAN PACIFIC
Loveless
Orchard
PU
QU

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Bond Head Bluffs	30M/15&16	980635

BRIEF DESCRIPTION

46 m (150 feet) high bluffs along Lake Ontario shoreline from Bond Head to west of Bouchette Point. Portions are vegetated with early successional apple-hawthorne-choke cherry. Willow-white birch-basswood - cedar woods are established in lower stable portions of the bluffs. Railway line and agricultural fields to north. A candidate nature reserve.

SOURCES

Hanna, 1980. Airphoto Interpretation

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 13/80			Hanna/80

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3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO, M7A 1W3

1981

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	X	Crysler Point Bluff	30M/16	074653

BRIEF DESCRIPTION

This 4 h (10 acre) site is situated on top of a 25-50 foot steep clay bluff with a sand mantle. It is southwest of Wesleyville and part of the proposed Wesleyville "B" Generating Station Site. This feature harbours a large population of *Gentiana crinita*. This species was once common on this landform. This is now the only known remaining population in the study area. The west meadow is characterized by grasses, sedges and asters; some areas are reforested with white spruce or silver maple seedlings. Also dense cedar seedling meadow with regionally rare *Senecio pauperculus*, *Parnassia glauca* and *Cypripedium reginae*.

SOURCES

Hanna, 1980. Airphoto Interpretation; Ontario Hydro, 1979

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
Hanna/Terpstra June 11, 1980			

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1981

APPENDIX B: DOCUMENTED SITES OF BIOLOGICAL SIGNIFICANCE

1. SITE DISTRICT 6-13: DOCUMENTED SITES OF BIOLOGICAL SIGNIFICANCE LISTED BY 1:50,000 N.T.S. MAP SHEET

1:50,000 N.T.S. maps included in Site District 6-13, listed from west to east, north to south.

30M/14E
31D/2
30M/15
31D/1
30M/16
31C/4 - only sites in Central Region have been listed

LEGEND TO ABBREVIATIONS

IBP - Site studied as part of International Biological Program

API - Site identified by air photo analysis (Environmental Data Card)

ESA - Environmentally sensitive area identified in a report for a regional municipality, county or conservation authority.

1. Central Lake Ontario Conservation Authority E.S.A., 1978
2. Northumberland County E.S.A., 1976.

SA - Ontario Ministry of Natural Resources Sensitive Areas

INT - Ontario Ministry of Natural Resources internal reports

OTHER - Other sources of information such as published articles, government reports, personal communication, herbaria information, species checklists, etc.

30M/14E MARKHAM	UTM GRID REFERENCES	INFORMATION SOURCE
South Dagmar Forest	580715	ESA_1
Kinsdale Area	590660	SA
West Lynde Creek Valley	600695	ESA_1
31D/2 SCUGOG		
East Whitby Relict	708743	API,OTHER
Enfield Woods	725745	ESA_1
Bowmanville Creek-West Branch	780750	ESA_1
Eatcross Creek	850750	SA
Upper Soper Creek	860750	ESA_1
Kendal Provincial Park	970770	INT
30M/15 OSHAWA		
Upper Lynde Creek	610724	ESA
Lynde Valley - Iroquois Beach	620665	ESA_1
LeVay's Marsh (Cranberry, Eastborne)	635560	IBP, SA
Lynde Creek	635575	ESA, SA
Lynde Shores Marsh (Ontario Hospital)	640570	IBP, ESA, SA
Lynde Creek Valley	640610	ESA_1
Anderson Street Woods	650655	ESA_1
West Branch of Oshawa Creek	660700	ESA_1
Pringle Creek Woods	670660	ESA_1
Oshawa Creek into Iroquois Beach	690665	ESA_1
East Branch of Oshawa Creek	690720	ESA_1
Thickson's Marsh	695580	IBP
Townline Pond	720734	ESA_1
Pumphouse Marsh	735585	SA
Oshawa Creek Woods	740590	ESA_1
Harmony Valley-Finer's Woods	740650	ESA_1
Farewell Creek Valley to Beach	755625	ESA_1
Oshawa Marsh (Second Marsh)	760600	IBP, SA, OTHER
Solina Bog	765698	ESA_1
Trull's Road - Courtice Woods	775660	ESA_1

	UTM GRID REFERENCES	INFORMATION SOURCE
Solina Woods	75660	ESA_1
Farewell Creek Valley through Beach	780675	ESA_1
Black Creek Valley	800665	ESA_1
Holt Road Woods	800680	ESA_1
Bowmanville Creek East Ranch	820715	ESA_1
Maple Grove Woods	825665	ESA_1
Bowmanville Creek	840660	ESA_1
Mackie Creek Valley	840730	ESA_1
---	855680	SA
Salem Hills	855685	ESA_1
Bowmanville Marsh (Second Marsh)	865620	IBP,ESA_1, SA
Soper Creek Valley (Stephen's Gulch Mackie Creek Woods)	865700	ESA_1
Lower Soper Creek	870660	ESA_1
Lower Bowmanville Creek	875620	ESA_1
Tobacco Woods	880695	ESA_1
MNR Tree Nursery	890715	SA
Newcastle Marsh	930640	IBP,SA
Clarke Summit Swamp	980680	IBP
31D/1 RICE LAKE		
Osaca	050765	ESA_2,SA
Baltimore Creek	294803	ESA_2
Haldimand Maple Stand	327814	ESA_2
Haldimand Twp. Trillium Patch	355785	SA
Shelter Valley	375825	SA
Shelter Valley Creek	395780	SA
30M/16 PORT HOPE		
---	025745	API
Newtonville Bog	030690	IBP,SA
---	070690	API
Wesleyville Marsh	085660	OTHER
Willow Beach Marsh	120675	IBP,SA
Hope Forest	133708	API
Carr Marsh	220700	IBP,SA
Cobourg North Forest	275740	API
Grafton Shore Forest	360730	API
31C/4 TRENTON		
Haldimand Twp. Pine-Oak Forest	630820	SA

P. Terpstra, 1980

2. SITE DISTRICT 6-13: DOCUMENTED SITES OF BIOLOGICAL SIGNIFICANCE LISTED BY PHYSIOGRAPHIC REGION (Chapman and Putnam, 1973)

Physiographic Regions within 6-13:

Iroquois Plain
South Slope

IROQUOIS PLAIN

30M/15 OSHAWA	UTM GRID REFERENCE	INFORMATION SOURCE
Lynde Valley - Iroquois Beach	620665	ESA_1
LeVay's Marsh (Cranberry, Eastborne)	635560	IBP, ESA_1, SA
Lynde Creek	635575	ESA_1, SA
Lynde Shores Marsh (Ontario Hospital)	640570	IBP, ESA_1
Lynde Creek Valley	640610	ESA_1
Anderson Street Woods	650655	ESA_1
Oshawa Creek into Iroquois Beach	690665	ESA_1
Thickson's Marsh	695580	IBP
Pumphouse Marsh	735585	SA
Oshawa Creek Woods	740590	ESA_1
Harmony Valley - Finer's Woods	740650	ESA_1
Farewell Creek Valley to Beach	755625	ESA_1
Oshawa Marsh (Second Marsh)	760600	IBP, SA, OTHER
Trull's Road - Courtice Woods	775660	ESA_1
Farewell Creek Valley through Beach	780675	ESA_1
Maple Grove Woods	825665	ESA_1
Bowmanville Creek	840660	ESA_1
---	855680	SA
Salem Hills	855685	ESA_1
Bowmanville Marsh (Second Marsh)	865620	IBP, ESA_1, SA
Soper Creek Valley (Stephen's Gulch, Mackie Creek Woods)	865700	ESA_1
Lower Soper Creek	870660	ESA_1
Lower Bowmanville Creek	875620	ESA_1
Tobacco Woods	880695	ESA_1
MNR Tree Nursery	890715	SA
Newcastle Marsh	925640	IBP, SA
Clarke Summit Swamp	980680	IBP
31D/1 RICE LAKE		
Osaca	050765	ESA_2, SA
Shelter Valley Creek	395780	SA

30M/16 PORT HOPE	UTM GRID REFERENCE	INFORMATION SOURCE
---	025745	API
Newtonville Bog	030690	IBP,SA
---	070690	API
Wesleyville Marsh	085660	OTHER
Willow Beach Marsh	120675	IBP,SA
Hope Forest	133708	API
Carr Marsh	220700	IBP,SA
Cobourg North Forest	275740	API
Grafton Shore Forest	360730	API
31C/4 TRENTON		
Haldimand Twp. of Pine-Oak Forest	630820	SA

SOUTH SLOPE

30M/14E MARKHAM		
South Dagmar Forest	580715	ESA_1
Kinsdale Area	590660	SA
West Lynde Creek Valley	600695	ESA_1
31D/2 SCUGOG		
Enfield Woods	725745	ESA_1
Bowmanville Creek-West Branch	780750	ESA_1
Eatcross Creek	850750	SA
Upper Soper Creek	860750	ESA_1
Kendal Provincial Park	970770	INT
30M/15 OSHAWA		
Upper Lynde Creek	610724	ESA_1
West Branch of Oshawa Creek	660700	ESA_1
Pringle Creek Woods	670660	ESA_1
East Branch of Oshawa Creek	690720	ESA_1
Townline Pond	720734	ESA_1
Solina Bog	765698	ESA_1
Solina Woods	775660	ESA_1
Farewell Creek Valley through Beach	780675	ESA_1
Black Creek Valley	800665	ESA_1
Holt Road Woods	800680	ESA_1
Bowmanville Creek - East Branch	820715	ESA_1
Mackie Creek Valley	840730	ESA_1
MNR Tree Nursery	890715	SA
31D/1 RICE LAKE		
Baltimore Creek	294803	ESA_2
Haldimand Maple Stand	327814	ESA_2
Haldimand Twp. Trillium Patch	355785	SA
Shelter Valley	375825	SA
Shelter Valley Creek	395780	SA

P. Terpstra, 1980

APPENDIX C: POLICY FOR AREAS OF NATURAL AND SCIENTIFIC INTEREST

Areas of Natural and Scientific Interest (ANSI) are areas of land and water containing natural landscapes or features which have been identified as having values related to protection, natural heritage appreciation, scientific study or education.

ANSIs may vary in level of significance. The most significant of these may contribute to the achievement of the Ministry's protection objective.

Where ANSIs occur on public lands managed by the Ministry, it will ensure that the land uses and activities which occur, provide for the protection of identified values.

On private lands, the Ministry will, through cooperation with others, attempt to ensure that landowners are aware of significant features on their properties and seek the owners' cooperation in protecting such features. The identification of areas of natural and scientific interest on private land does not indicate an intent of the Ministry to acquire this land.

ANSIs encourage the protection of additional areas not regulated as provincial parks and provide a focus for both the public and private sectors to contribute to the protection of Ontario's natural heritage.

The policy for Areas of Natural and Scientific Interest is taken from *Backgrounder: Land Use Guidelines*. June, 1983.

BIBLIOGRAPHY

Argus, G.W. and D.J. White, 1977. The Rare Vascular Plants of Ontario: Syllogeus No. 14, The National Museums of Canada, Botany Division, Ottawa.

Bobbette, R. S. W., 1975. Environmental Data Cards were completed for biologically significant sites in Site District 6 , east of the Niagara Escarpment based upon an airphoto interpretation study. Site cards are on file in the Heritage Resources Centre, Parks Branch, Ontario Ministry of Natural Resources, Whitney Block, Queen's Park.

Central Lake Ontario Conservation Authority, 1978. Environmental Sensitivity Mapping Project. Prepared by Gartner Lee Associates Limited, Markham.

Chapman, L.J. and D.F. Putnam, 1973. The Physiography of Southern Ontario. 2nd edition, University of Toronto Press.

Collins, J., 1979. Second Marsh: Flowers Gratefully Declined. Ontario Naturalist, summer edition.

Diamond, J. R., 1975. The island dilemma: lessons of modern biogeographic studies for the design of natural reserves. Biological Conservation 7:129-146.

Dougan, J.M., 1975. Vegetational Survey of Kendal Provincial Park Reserve. Environmental Planning Series V, 23. Ontario Ministry of Natural Resources, Division of Parks, Central Region.

Gleason, H.A., 1974. The New Britton and Brown Illustrated Flora of the Northeastern United States and Adjacent Canada. Vol. I-III. Hofner Press, New York.

Godfrey, W.W., 1966. The Birds of Canada. Queen's Printer, Ottawa.

Hall, S.L., R. Jones (eds.), 1976 Northumberland County Environmentally Sensitive Areas Study. Trent University, Peterborough.

Hanna, R., 1980. Environmental Data Cards were completed for biologically significant sites in Site District 6-13 based upon an airphoto interpretation study. Site cards are on file in the Heritage Resources Centre, Parks Branch, Ministry of Natural Resources, Whitney Block, Queen's Park.

Hills, A., 1959. A Ready Reference to the Description of the Land of Ontario and Its Productivity. Maple Division of Research, Ontario Department of Lands and Forests.

International Biological Program, 1969-73. Checksheets completed by various individuals under the direction and auspices of the Committee for Terrestrial Ecosystems, International Biological Program. Copies of checksheets for Ontario sites are kept in the Nature Reserve files in the Heritage Resource Centre, Parks Branch, Ministry of Natural Resources, Whitney Block, Queen's Park.

Jeglum, J.K., A.N. Boissoneau and J.F. Haavisto, 1974. Towards a Wetland Classification for Ontario. Great Lake Forest Research Centre, Canadian Forestry Service, Department of the Environment.

Hanna, J. E., 1980. Personal Communication. Biologist, J. E. Hanna Associates Inc.

Kershaw, L., J. K. Morton and J. M. Venn, 1976. A List of Rare or Endangered Species in the Canadian Flora. Part of a M.Sc. Thesis, Department of Biology, University of Waterloo.

Lindsay, K. M. and R. Hanna, 1980. Preliminary Life Science Systems Assessment of Provincial Parks and Park Reserves in Central and Southwestern Regions. Draft Report, Parks and Recreation Section, Ontario Ministry of Natural Resources, Central Region.

Lindsay, K. M., 1980. Summary of Life Science Program. Presented to the Regional Parks Technical Committee Meeting, Southwestern Region, January 28, 1980.

_____, 1980. Personal Communication. Biologist, Parks and Recreation Program, Central and Southwestern Regions.

Maycock, P. F., 1976. A Preliminary Survey of the Vegetation of Ontario as a Basis for the Establishment of a Comprehensive Nature Reserve System. Provincial Parks Branch, Ontario Ministry of Natural Resources, 2 volumes, in preparation.

Ontario Hydro, 1979. Wesleyville "B" Data Report. Report No. 78-456-K, Section 4.

Ontario Ministry of Natural Resources, 1972. Sensitive Areas Report. Lindsay District.

_____, 1980. Significance of Second Marsh, Beaton Farm. Referral to the Ontario Municipal Board. Fish and Wildlife Branch, Central Region.

_____, 1983. Backgrounder: Land Use Guidelines.

_____, 1983. Lindsay District Land Use Guidelines.

Park Planning Branch, 1976. Significant Natural Areas Along the Niagara Escarpment. A report on Nature Reserve Candidates and other Significant Natural Areas in the Niagara Escarpment Planning Area. Division of Parks, Ontario Ministry of Natural Resources, Queen's Park.

Rodgers, G. K., 1979. First Draft Provincial Park Systems Plan. Parks and Recreation, Central Region, Ontario Ministry of Natural Resources.

Tozer, R. G. and J. M. Richards, 1974. Birds of the Oshawa-Lake Scugog Region, Ontario. The Alger Press Ltd., Oshawa.

Wainio, A. A., R. A. Hester and A. Marshall, 1973. The Waterfowl of the Toronto Islands and a Survey of the Marshes of the Lake Ontario Waterfront in the Toronto Region. Ministry of Natural Resources, Toronto.

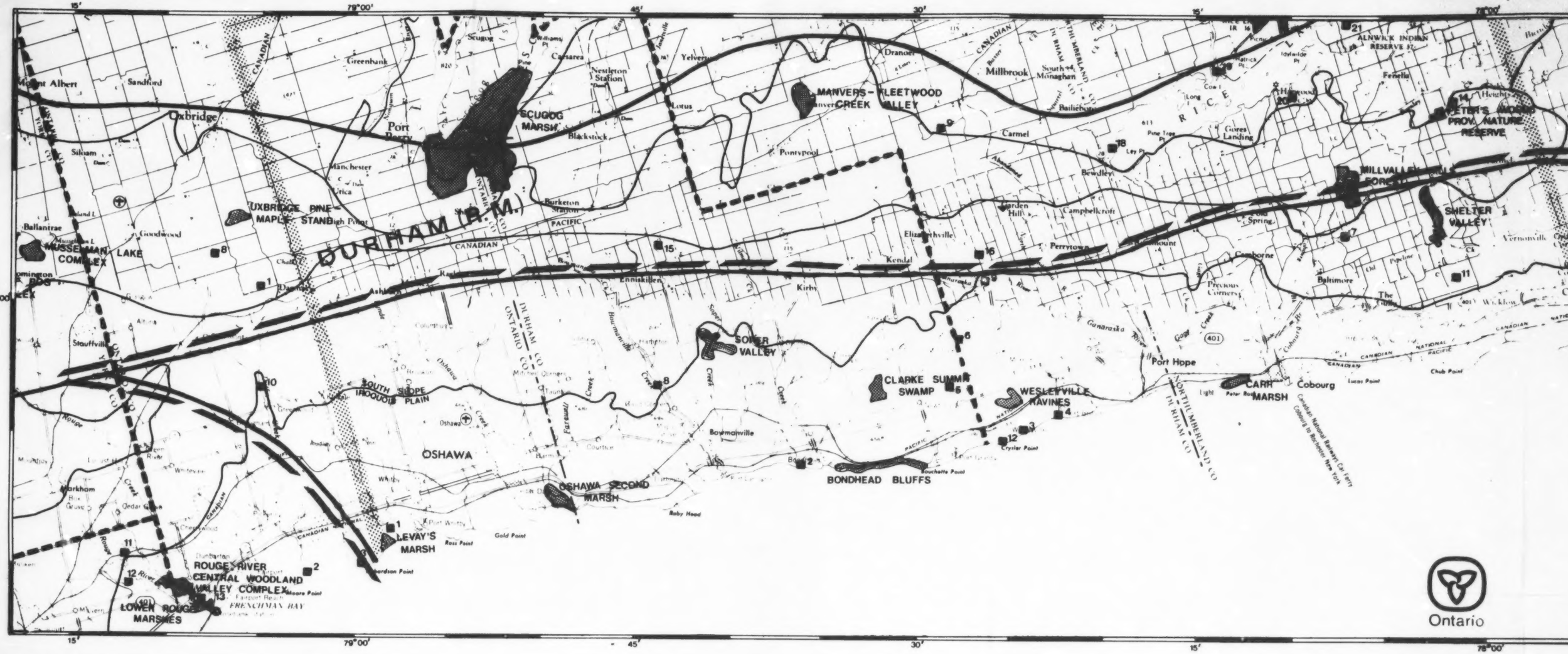
MAP REFERENCES

Canada Department of Energy, Mines and Resources, Surveys and Mapping Branch, National Topographic System, 1:50,000 Map Series:

Markham	30M14/E	1960
Oshawa	30M/15	1970
Port Hope	30M/16	1970
Trenton	31C/4	1968
Rice Lake	31D/1	1970
Scugog	31D/2	1976

Ontario Department of Mines and Northern Affairs, Ontario Research Foundation, 1972. Physiography of the South Central Portion of Southern Ontario , Map # 2226, 1:253,440 to accompany The Physiography of Southern Ontario. by L.J. Chapman and D.F. Putnam.

Ontario Ministry of Natural Resources, Airphoto Library, 1971. 1:15,840.



Site District boundary

Physiographic Region boundary

Candidate Nature Reserve

Significant Site

Drawn by P. Terpstra

Date December 1981

The name "Candidate Nature Reserve" was changed to "Area of Natural and Scientific Interest (ANSI)" in 1983.

CANDIDATE NATURE RESERVES AND SIGNIFICANT IN SITE DISTRICT 6-13, WITHIN CENTRAL REGIO

Candidate Nature Reserves

WETLANDS

LAKEFRONT MARSH

- LeVay's (Cranberry, Eastbourne) Marsh (30M/15 630560)
- Oshawa (Second) Marsh (30M/15 760600)
- Carr Marsh (30M/16 230770)

SWAMP

Clarke Summit Swamp (30M/15 980680)

RIVER VALLEY SYSTEMS WITH ADJOINING UPLANDS

SAND PLAIN

Signi

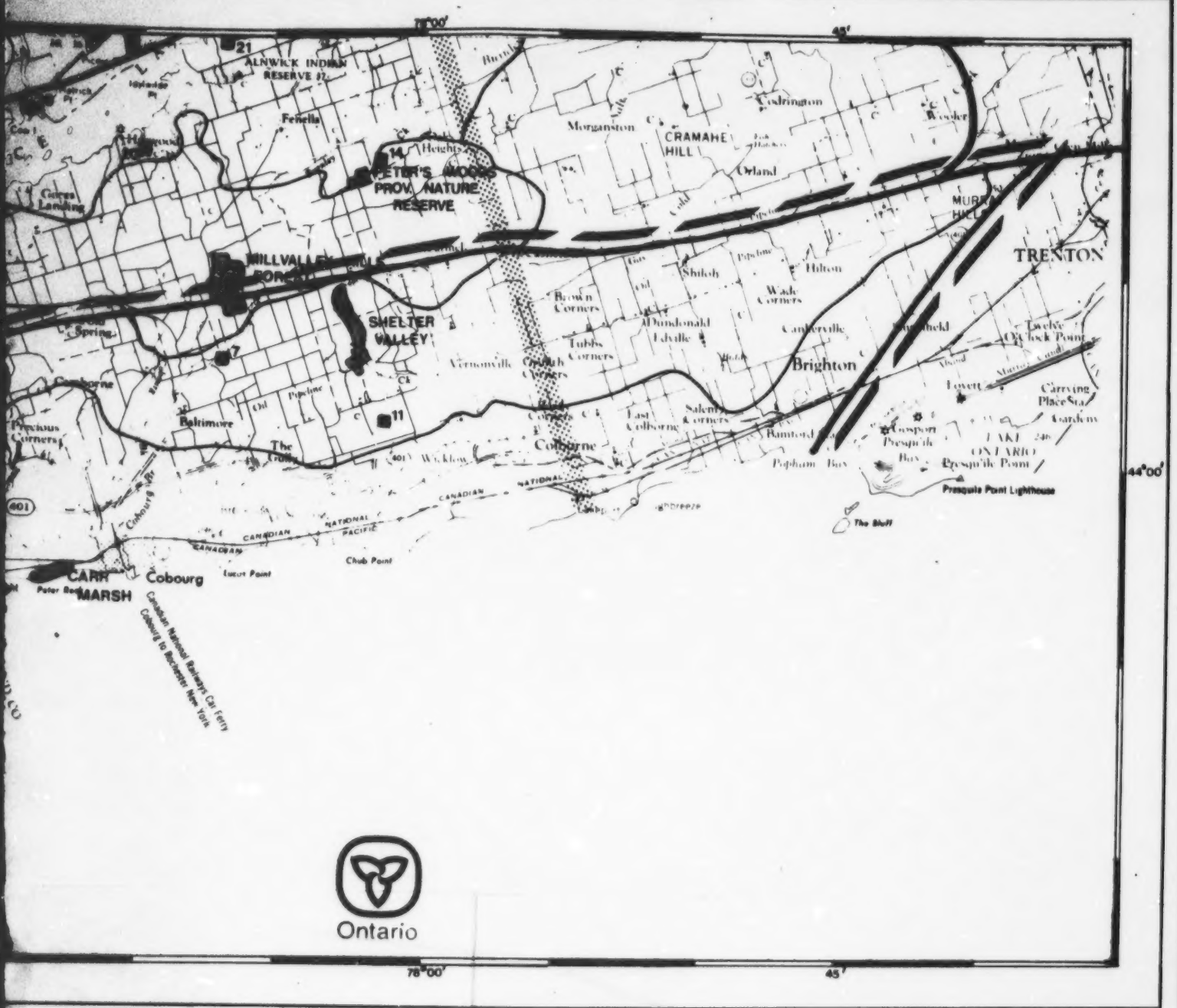
WETLANDS

LAKEFRONT MA

1. Ontar
2. Newca
3. Wesle
4. Willo

SWAMP

5. Newto
6. Graha
7. Balti



SERVES AND SIGNIFICANT SITES
13, WITHIN CENTRAL REGION

Significant Sites

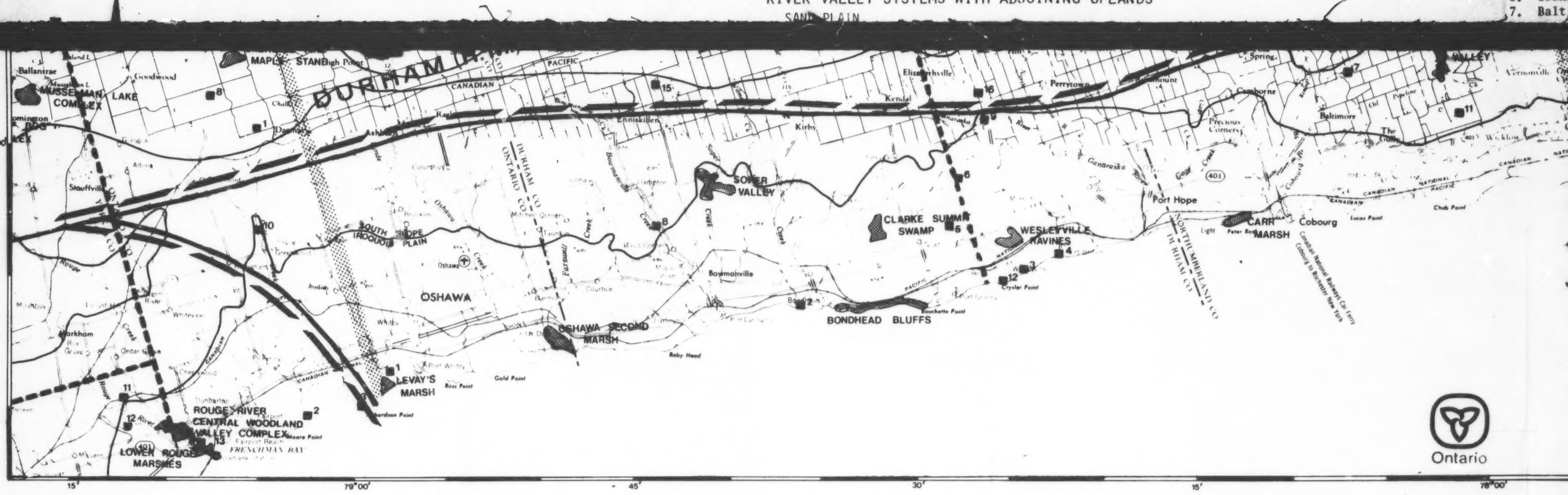
WETLANDS

LAKEFRONT MARSH

1. Ontario Hospital Marsh (30M/15 640570)
2. Newcastle Marsh (30M/15 925630)
3. Wesleyville Marsh (30M/16 085660)
4. Willowbeach Marsh (30M/16 110675)

SWAMP

5. Newtonville Bog (30M/16 030690)
6. Graham Creek Swamp (30M/16 035725)
7. Baltimore Creek Swamp (30M/1[illegible]



Site District boundary

Physiographic Region boundary

Candidate Nature Reserve

Significant Site

Drawn by P. Terpstra

Date December 1981

The name "Candidate Nature Reserve" was changed to "Area of Natural and Scientific Interest (ANSI)" in 1983.

Kilometres Scale 1:250,000

5 0 5 10 15

Sources of Information

Physiographic region boundaries used on this map follow those of Chapman and Putnam, 1966. Site District boundaries presented here were derived from an unpublished small scale map provided by Forest Site Research. Boundaries were extrapolated and are thus only approximations of Site District boundaries. Please refer to the Site District 6-13 report (Areas of Natural and Scientific Interest in Site District 6-13: A Review and Assessment of Significant Natural Areas in Site District 6-13 by R. Hanna, 1984) for further information.

CANDIDATE NATURE RESERVES AND SIGNIFICANT IN SITE DISTRICT 6-13, WITHIN CENTRAL REG

Candidate Nature Reserves

WETLANDS

LAKEFRONT MARSH
- LeVay's (Cranberry, Eastbourne) Marsh (30M/15 630560)
- Oshawa (Second) Marsh (30M/15 760600)
- Carr Marsh (30M/16 230770)

SWAMP
- Clarke Summit Swamp (30M/15 980680)

RIVER VALLEY SYSTEMS WITH ADJOINING UPLANDS

SAND PLAIN
- Soper Valley (30M/15 860710)

DRUMLINIZED TILL PLAIN
- Shelter Valley (31D/1 378815)
- Wesleyville Ravines (30M/16 080680)

SHORELINE BLUFFS
- Bond Head Bluffs (30M/15 980635)

Sig

WETLANDS

LAKEFRONT
1. On
2. Ne
3. We
4. Wi

SWAMP
5. Ne
6. Gr
7. Ba

RIVER VAL

SAND PLAI
8. Bo
9. Os

DRUMLINIZ
10. Du
11. Ec

SHORELINE
12. Cr

SERVES AND SIGNIFICANT SITES
13, WITHIN CENTRAL REGION

Significant Sites

WETLANDS

LAKEFRONT MARSH

1. Ontario Hospital Marsh (30M/15 640570)
2. Newcastle Marsh (30M/15 925630)
3. Wesleyville Marsh (30M/16 085660)
4. Willowbeach Marsh (30M/16 110675)

SWAMP

5. Newtonville Bog (30M/16 030690)
6. Graham Creek Swamp (30M/16 035725)
7. Baltimore Creek Swamp (31D/1 305810)

RIVER VALLEY SYSTEMS WITH ADJOINING UPLANDS

SAND PLAIN

8. Bowmanville Creek (30M/15 827680)
9. Osaca-Ganaraska River (31D/1 050765)

DRUMLINIZED TILL PLAIN

10. Duffin Creek (30M/14 540670)
11. Eddystone Drumlin (31D/1 385785)

SHORELINE BLUFFS

12. Crysler Point Bluff (30M/16 074653)